THE LANCET

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

Telegrams—LANCET, WESTRAND LONDON *Telephones*—GERRARD 4314 & 4315 *Offices*—423, Strand, London, W.C.2

No. XV. OF VOL. II., 1925. No. 5328. Vol. CCIX. LONDON, SATURDAY, OCTOBER 10, 1925. Founded 1823. Registered as a Newspaper. Published Weekly. Pp. 136—Price 1s. Annual Subscription Inland £2 2s. Abroad £2 10s

OXFORD MEDICAL PUBLICATIONS.

SEE PAGE 4.

Now Ready. Second Edition. Demy 8vo. Pp. x. + 525. Price 12s. 6d. (postage 9d.).

PITFALLS OF SURGERY.

By HAROLD BURROWS, C.B.E., M.B., B.S. (Lond.), F.R.C.S.; Surgeon, Gosport War Memorial Hospital; late Hunterian Professor, R.C.S.

London: Baillière, Tindall & Cox, 8, Henrietta-st., Covent Garden.

FIFTH EDITION. Demy 8vo. Pp. x. + 242. With 42 Illustrations. Price 10s. 6d. net (postage 9d.).

SQUINT: ITS CAUSES, PATHOLOGY, AND TREATMENT.

By CLAUD A. WORTH, F.R.C.S. Eng., Consulting Surgeon, Royal London Ophthalmic Hospital.

Baillière, Tindall & Cox, 8, Henrietta-street, London, W.C. 2.

SOME NEW BOOKS.

See J. & A. Churchill's List, page 5.

WORKS BY J. B. HURRY, M.A., M.D

VICIOUS CIRCLES IN DISEASE. Illustrated. 3rd Edition. 15s. net. French Edition, 1923; Spanish Edition, 1924; Italian Edition, 1925.

POVERTY AND ITS VICIOUS CIRCLES. Illustrated. 2nd Edition. 15s. net. Japanese Edition, 1921; French Edition, 1924; Italian Edition, 1925.

THE VICIOUS CIRCLES OF NEURASTHENIA AND THEIR TREATMENT. Illustrated. 3s. 6d. net.

THE IDEALS AND ORGANISATION OF A MEDICAL SOCIETY. 2s. net.

London: J. & A. Churchill, 7, Great Marlborough-street, W.1.

ABRAMS' METHODS OF DIAGNOSIS AND TREATMENT.

Edited by Sir JAMES BARR, C.B.E., D.L., F.R.S.E., LL.D., M.D., F.R.C.P. Demy 8vo, 5s. net.

"I can wholeheartedly commend this book to all those medical men and intelligent laymen who are interested in the advancement of the diagnosis and treatment of disease. It reflects great credit on all those who are carrying out Abrams' methods in this country: they have achieved great things and will achieve more. I should like to see a large number of the intelligent young members of our profession take up this work: there is ample scope for thousands more than the very able men already in the field."—SIR JAMES BARR.

Wm. Heinemann (Medical Books), Ltd., 20, Bedford-street, London, W.C. 2.

With 79 Illustrations on 40 Plates and 1 Text-figure. Demy 8vo. 12s. 6d. net; postage 6d.

INTERNAL DERANGEMENTS OF THE KNEE-JOINT.

THEIR PATHOLOGY AND TREATMENT BY MODERN METHODS.

By A. G. TIMBRELL FISHER, M.C., F.R.C.S. Eng.

"Throughout the book there is evidence of exhaustive investigation by the judicial mind of a trained surgeon of wide experience. We cannot speak too highly of this valuable contribution to medical literature."—Extract from *Archives of Surgery*, Chicago.

"The most complete account of internal derangements of the knee that has been published in English."—BRITISH JOURNAL OF SURGERY.

London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C. 1.

NINTH (REVISED) EDITION

HOWELL'S TEXT-BOOK OF PHYSIOLOGY

See Saunders' Advertisement on Page 7.

BAINBRIDGE & MENZIES' ESSENTIALS OF PHYSIOLOGY.

FIFTH EDITION. Edited and thoroughly Revised by C. LOVATT EVANS, D.Sc. (Lond.), M.R.C.S., L.R.C.P., F.R.S., Professor of Physiology, University of London, at St. Bartholomew's Medical College. With Illustrations. 8vo. 14s. net.

Considerable additions have been made to keep the matter up-to-date, and some new figures have been added.

Longmans, Green & Co., 39, Paternoster Row, London, E.C. 4.

NEUROLOGICAL FRAGMENTS.

By J. HUGHLINGS JACKSON, M.D., F.R.S., F.R.C.P. With Biographical Memoir by JAMES TAYLOR, M.D., F.R.C.P., and including the Recollections of Sir JONATHAN HUTCHINSON and Dr. MERCIER. 12s. 6d. net.

Oxford University Press, Amen House, London, E.C.4.

A HANDBOOK OF AURAL SURGERY.

By WILLIAM WILSON,

Oto-Laryngologist, St. John's Ear Hospital; Withington, Crumpsall and Booth Hall Hospitals, &c., Manchester.

JOURNAL OF LARYNGOLOGY—"Dr. Wilson has succeeded—the book can be confidently recommended."

MEDICAL PRESS—"Interesting and even refreshing—has characteristics of its own—we recommend them to those who teach as much as to those who learn."

JOURNAL OF THE AMERICAN MED. ASSOCIATION.—"A veritable compendium of information."

15s. net.

Sherratt & Hughes. Manchester.

READY OCTOBER 15th.

A NEW MEZZOTINT PORTRAIT OF WILLIAM HARVEY, M.D.

FOR SUBSCRIBERS ONLY. (1578—1657) LIMITED TO 250 IMPRESSIONS.

100 Impressions on India Paper - - price £2 2 0
150 „ on Plate Paper - - „ £1 1 0

Engraved surface measures 12¾×10 inches. With margin 27×20 inches. Forms an admirable subject for Consulting Room or Surgery. Framed in Black and Gold, 16s. extra.

CHAS. J. SAWYER, Ltd., Grafton House, 12 & 13, Grafton St., Bond St., London, W. 1.

Farbwerke vorm. Meister Lucius & Brüning, Hoechst a. M., Germany.

The Organic Gold Preparation

'TRIPHAL'

(Sodium Aurothiobenzoimidoazol-carbonate)

for the specific treatment of

TUBERCULOSIS

More readily tolerated than the preparations of gold hitherto available and equally effective. Administered intravenously in doses of 0.025 gm. to 0.2 gm.

Original Packing:—Ampuls of 0.01 gm., 0.025 gm., 0.05 gm., and 0.1 gm.

Literature will be sent to Medical Men at any time on request through:

A. C. HENRY, 19, St. Dunstan's Hill, London, E.C. 3.

Use LESLIES ZŌPLA Plaster

FOR PERFECT RESULTS

Tenaciously Self-adhesive, really Non-irritating, Antiseptic.

IT STANDS THE STRAIN

ON LIGHT AND HEAVY CLOTHS, WHITE OR FLESH. ALSO ON HOLLAND. ALL WIDTHS AND SIZES.

Write for Samples.

USE ALSO OUR HOLLAND STRAPPING.

LESLIES LTD., High Street, Walthamstow, LONDON, E.17.

VALENTINE'S
PREPARATION
NUTRIO PRIME
MEAT JUICE.
The result of an original Process of Preparing Meat, and extracting its Juice by which the elements of nutrition are obtained in a state, ready for immediate absorption.
DIRECTIONS-Dissolve one teaspoonful of the Preparation in two or three tablespoonfuls of cold or warm water. The use of boiling water changes the character of the preparation.

Valentine's Meat-Juice

For Quieting the **Irritable Stomach, Aiding Digestion** and **Sustaining** and **Strengthening, Valentine's Meat-Juice** is employed in **Hospital** and **Private Practice** in the treatment of

Diseases of Children.

Dr. Raphael Raimondi, *Consulting Physician of the Montmartre Nurseries, Paris, France:* "I use VALENTINE'S MEAT-JUICE with Nurslings eighteen months to two years old. These very Weak Babies derive great benefit from the use of this tonic preparation. I give it to Debilitated Infants, after they are eighteen months old, in doses of one teaspoonful in thirty grammes of boiled water twice a day, and to be continued for a month."

Park B. Tucker, M.D., *Health Officer, Hamilton, Bermuda:* "I have found VALENTINE'S MEAT-JUICE invaluable for teething children, who readily take and retain it when they refuse everything else. It has also proved very palatable and strengthening in all cases of irritable stomach, especially to that peculiar nausea so often complained of from the abuse of ardent spirits."

For Sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY

RICHMOND, VIRGINIA, U. S. A.

D 117

THE LANCET

No. 5328. LONDON, SATURDAY, OCTOBER 10, 1925. CCIX.

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

AN ADDRESS on Ununited Fractures. By Prof. ERNEST W. HEY GROVES, M.S. Lond., F.R.C.S.—(*Illustrated*) .. 735

AN ADDRESS on Avenues in Medicine. By Sir CHARLES SHERRINGTON, M.D. 741

AN ADDRESS on Tradition in Medicine. By C. E. LAKIN, M.D. 744

AN ADDRESS on the Medical Career. By Sir HERBERT F. WATERHOUSE, M.D., F.R.C.S... 746

ORIGINAL ARTICLES.

Stable Nervous Control in Relation to Flying Efficiency. By Group Captain MARTIN FLACK, M.B., Ch.B. 748

Faecal Enterolith of the Small Intestine. By R. J. MORRIS, M.D., M.R.C.P.—(*Illustrated*).. 751

Ischæmia Cerdis Intermittens. By Dr. L. BISCHOFF 753

NEW INVENTIONS.

A Convenient Dissector (A. Knyvett Gordon, M.B.).—(*Illustrated*). .. 755

MEDICAL SOCIETIES.

Royal Society of Medicine: Section of Obstetrics and Gynæcology 756

REVIEWS AND NOTICES OF BOOKS.

An Introduction to Mental Hygiene and the Hygiene of School Instruction. By Prof. William H. Burnham, Ph.D..... 757

A Clinical Handbook of Mental Diseases. By Lieut.-Colonel W. S. Jagoe Shaw, M.D..... 758

Die Örtliche Betäubung. By Prof. Dr. Heinrich Braun 758

The Technique of Local Anæsthesia. By Arthur E. Hertzler, M.D.....758

Buchanan's Manual of Anatomy, including Embryology. Edited by E. Barclay-Smith, M.D., and others 758

Notes on Medical Case-taking and the Examination of Patients. By G. S. Haynes, M.D. 758

Causeries d'Ophtalmologie Pratique. By Dr. A. Cantonnet 759

Experiments in Genetics. By C. C. Hurst 759

A Text-book of Practical Therapeutics. By Prof. H. A. Hare, M.D..... 759

Ghosh's Treatise on Materia Medica and Therapeutics. By Birendra Nath Ghosh 759

Text-book of Meat Hygiene. By Prof. Richard Edelmann, Ph.D. 759

Die Konstitutionelle Disposition zu Innere Krankheiten. By Dr. Julius Bauer 760

Incompatibilities in Prescriptions. By Edsell A. Ruddiman, M.D. ... 760

LEADING ARTICLES.

POST-GRADUATE EDUCATION..... 761

THE SOCIAL HYGIENE CONGRESS 761

THE MEDICAL ASPECT OF INDUSTRY 762

ANNOTATIONS.

Care of the Primigravida 763

Some Literary Death-beds 764

Treatment of Interstitial Keratitis..... 764

Apt Patients 765

The Erect Posture and its Drawbacks..... 765

Medical Study in Switzerland..... 765

The Mental Patient's Chance of Recovery 766

Sticking-plaster Dermatitis 766

Health of the U.S.A. 767

MODERN TECHNIQUE IN TREATMENT.

CLXII.—Treatment of Post-Operative Pulmonary Complications. By GEOFFREY EDEN, M.D., M.R.C.P. 767

SPECIAL ARTICLES.

The Centenary of the Discovery of Bright's Disease. By Sir WILLIAM HALE-WHITE, K.B.E., M.D.—(*With portrait*)... 769

Public Health Administration. Administrative Machinery in European Countries 771

Post-Graduate Lectures at St. Mary's Hospital 774

Imperial Social Hygiene Congress, Wembley, Oct. 5th–7th: Naval and Military Aspects.—(*To be continued*) 776

The Motor Show at Olympia: The Choice of a Car.... 780

PUBLIC HEALTH SERVICES.

School Medical Service.... 778

Infectious Disease in England and Wales 779

THE SERVICES.

Royal Naval Medical Service.—Royal Army Medical Corps.—Royal Air Force.—Deaths in the Services: Maj.-Gen. Sir Hayward Reader Whitehead, K.C.B.—(*With portrait*) 779

CORRESPONDENCE.

Experimental Epidemiology (Prof. W. W. C. Topley) 781

Technical Instruction in Operative Surgery (Sir John O'Conor) 781

Persistent Diarrhœa in Phthisis (Dr. Felix Savy) 781

Altruism and the "Common Cold" 781

A Surgical Coincidence (Dr. H. E. S. Stiven) 782

Sugar and Athletics: A Shakspearian Allusion .. 790

OBITUARY.

James Niven, M.A., LL.D., M.B.—(*With portrait*) .. 783

Alan Reeve Manby, M.D. 783

Edmund Langley Hunt, C.M.G., L.R.C.P 784

William Morriston Davies, M.D. 784

William Ronald Kirkness, M.R.C.S..... 784

MEDICAL NEWS

Hospital Dinners: St. Bartholomew's.—Charing Cross.—St. George's.—London.—St. Mary's.—Middlesex.—Westminster 784

Chelsea Clinical Society .. 785

Univ. Coll. Hosp. Dinner 785

Spa Treatment for Panel Patients 745

Leeds Voluntary Hospitals Committee..... 745

Alexandra Day 747

The late Dr. R. T. Hughes 747

Hospital Extension at Stockton-on-Tees 752

British Dental Hospital .. 763

Fellowship of Medicine and Post-Grad. Med. Assoc... 767

Cardiff Convalescent Home 771

Welsh Mental Deficients.. 771

Insanitary Irish Hospital.. 771

New Maternity Home for Chester..... 778

Vaccination and Compulsion in Ireland 782

Prince of Wales' Gen. Hosp. 785

Harveian Society 785

Soc. of Supt. of Tubere. Inst. 785

People's League of Health 785

Medical Defence Union ... 785

Royal Society of Arts..... 785

Medical Soc. of London... 785

West Kent Med.-Chir. Soc. 786

University of Bristol 786

Roy. Fac. Phys. and Surg. of Glasg. 786

Manchester Babies' Hospital 786

The late Dr. William Sang 786

Roy. Inst. of Public Health 786

Surgical Instrument Manufac. Assoc. 786

NOTES, COMMENTS, AND ABSTRACTS.

The London Medical Exhibition: A Repetition in Liverpool..... 788

International Health Organisations..... 788

Colonial Health Reports .. 789

The Newsvendors' Benevolent and Provident Institution 790

The "Euphoros" Self-adjusting Arm-Sling.... 790

A Famous Sanitary Company 790

Nursery Psychology..... 790

A National Indictment ... 790

Medical Diary 786

Appointments, Vacancies.. 787

Births, Marriages, Deaths 787

TWO STANDARD WORKS

SIXTH Edition. With Plates from Original Drawings (6 in Colours) and other Illus. in the Text. Demy 8vo. **£2 2s.** net.

ON DISEASES OF THE LUNGS AND PLEURÆ

Including TUBERCULOSIS AND MEDIASTINAL GROWTHS.

By **Sir RICHARD DOUGLAS POWELL**, Bart., K.C.V.O., M.D. Lond., F.R.C.P., Physician-in-Ordinary to H.M. the King Consulting Physician to the Middlesex and Brompton Hospitals; and **Sir PERCIVAL H. S. HARTLEY**, C.V.O., M.D.Camb. F.R.C.P., Physician, St. Bartholomew's Hospital; Senior Physician, Brompton Consumption Hospital, etc.

"... can be confidently recommended as a safe guide to the practitioner in search of authoritative medical opinion in this country at the present time."—BRITISH MEDICAL JOURNAL.

With 14 Coloured Plates and 435 Illustrations (including 66 Plates in the Text). Royal 8vo. **£2 10s.** net.

DISEASES OF THE SKIN:

A Text-Book for Students and Practitioners.

By **J. M. H. MACLEOD**, M.A., M.D., F.R.C.P., Physician for Diseases of the Skin, Charing Cross Hospital; London Hospital for Tropical Diseases, and Victoria Hospital for Children; Lecturer on Dermatology, London School of Tropical Medicine, etc.

"... One of the most important books on Dermatology produced in this country in recent years ... singularly complete. The author is to be congratulated on his work, which is a credit to British Dermatology."—BRITISH MEDICAL JOURNAL.

London: H. K. LEWIS & CO. LTD., 136 Gower Street, W.C. 1.

HENRY KIMPTON'S NEW PUBLICATIONS

NEW WORK. *JUST READY.*

OPERATIVE CYSTOSCOPY

By **E. CANNY RYALL**, F.R.C.S.

Founder of and Senior Surgeon to All Saints' Hospital for Genito-Urinary Diseases, London.
Royal 4to (13 × 9). With 115 Plates, containing 670 Original Illustrations, of which 528 are coloured. Buckram, gilt top.
Price **70s.** net. (Postage 1s. 3d.)

NEW (THIRD) EDITION. **OSLER & McCRAE'S** *VOLUME I. JUST READY.*

MODERN MEDICINE

Edited by **THOMAS McCRAE**, M.D., F.R.C.P.Lond.

NEW THIRD EDITION. In Six Royal Octavo Volumes of about 900 pages each, Illustrated, and desk index volume. Cloth. Price **42s.** net per volume. (Postage 1s.) Orders taken for complete sets only.
¶ The endeavour throughout is to make the work useful to the man in general practice.

NEW (SECOND) EDITION. *THIS DAY.*

DISEASES OF THE BRONCHI, LUNGS AND PLEURA

By **FREDERICK T. LORD**, M.D.

SECOND EDITION, THOROUGHLY REVISED AND ENLARGED.

Royal Octavo. 776 pages, with 107 Engravings and 3 Coloured Plates. Cloth. Price **36/-** net. (Postage 9d.)

NEW WORK. *THIS DAY.*

THE SURGERY OF PULMONARY TUBERCULOSIS

By **JOHN ALEXANDER**, B.S., M.A., M.D.

Royal Octavo. 356 pages, with 53 Illustrations and 12 Plates. Cloth. Price **21/-** net. (Postage 9d.)
¶ Awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, 1925.

NEW WORK. *THIS DAY.*

AN INTRODUCTION TO OBJECTIVE PSYCHOPATHOLOGY

By **G. V. HAMILTON**, M.D. With a Foreword by ROBERT M. YERKES, Ph.D., LL.D.
Royal Octavo. 354 pages. Cloth. Price **21/-** net. (Postage 9d.)

HENRY KIMPTON, 263, HIGH HOLBORN, LONDON, W.C.1.

H. K. LEWIS & Co. LTD.

PUBLISHERS AND BOOKSELLERS.

SECOND-HAND DEPARTMENT: 140, Gower Street.

MEDICAL AND SCIENTIFIC CIRCULATING LIBRARY.

ANNUAL SUBSCRIPTION FROM ONE GUINEA.

LIBRARY READING ROOM (First Floor) open daily to SUBSCRIBERS.

136, Gower Street, London, W.C.1

JUST PUBLISHED.

FOURTH EDITION. Crown 8vo. 1000 pp. + xv. Fully Revised and Enlarged. **21s.** *net; postage 9d.*

SYNOPSIS OF MEDICINE

For Practitioners and Students.

By H. LETHEBY TIDY, M.A., M.D., B.Ch. (Oxon.), F.R.C.P. (Lond.),
Assistant Physician, St. Thomas's Hospital; Physician, Royal Northern Hospital.

This little volume has been extraordinarily well received. That a fourth edition has been called for within five years is sufficient proof of its great and permanent value.

"Far ahead of any medical synopsis it has been our lot to encounter."—LANCET.

Bristol: JOHN WRIGHT & SONS Ltd. **London: SIMPKIN & CO. Ltd.**

An Address
ON
UNUNITED FRACTURES.

Delivered at St. Bartholomew's Hospital, London,

BY ERNEST W. HEY GROVES, M.S. LOND., F.R.C.S. ENG.,
PROFESSOR OF SURGERY, BRISTOL UNIVERSITY.

WHEN I was a student in these revered and ancient walls the subject of fractures received very scant attention in our surgical curriculum. Of course, necessity sometimes compelled the admission of a case of fracture of the leg bones into the wards, and then splints were duly applied and after some weeks the patient was sent out: what became of him we never inquired—he did not interest us. The smartness of a house surgeon was recognised by this among other tests—that he should avoid taking in fracture cases and, having taken them in, should hide the fact and get rid of the offending case as soon as possible. I remember Mr. Lockwood advising us if we ever got a fracture case in private practice to pass it on to our rival across the street, so that it might be his undoing and not ours, but beyond this, I cannot recollect any member of the surgical staff ever taking any notice of a fracture during my dressership. No doubt this is all changed now, and in the full illumination of the X rays the diagnosis and treatment of fractures are taught as embodying the most important principles of the science and art of surgery.

CAUSES OF NON-UNION.

The study of a case of a fracture which has failed to unite is one which may well absorb the interest of the pathologist and the physician as well of the surgeon and the mechanic. Why does repair sometimes fail? What determines the ordered balance between tissue formation and tissue absorption? What is the difference between an osteoblast and an osteoclast? What is the vital relation between the cells and the intercellular material of the skeleton? Such are some of the questions which are suggested and which I find easier to ask than to answer.

Let us consider the last question a little more closely, for it affords a good illustration of the baffling nature of the problem of bone pathology, and it is very intimately connected with explaining the nature and determining the treatment of an ununited fracture. All connective tissue and especially bone and cartilage are distinguished by the large proportion which the intercellular material bears to the cellular element. Is this intercellular material living or dead? A piece of bone is regarded as dead if it contains neither blood-vessels nor cells. But according to this definition all the extra cellular material of the bone is then dead; it is a secretion or excretion of the living cells which can be laid down or taken up according to the necessities of the moment.

The endoskeleton of the vertebrate, like the exoskeleton of the invertebrate, is formed by the living tissues, but is outside them. Any piece of human bone may become temporarily deprived of its blood-supply and its cells all die, and yet in a very short time new blood-vessels and new cells invade the dead bone and the dry bone truly lives once again. On the other hand, a devitalised portion of bone may remain for an indefinite time without blood and without cells, an indolent mass incapable of growth or repair. This, in fact, is the condition of the ends of the bones in many cases of ununited fracture.

The causes of non-union may be grouped as follows:—

Mechanical—

Gap between the bone ends.
Unrestricted mobility.
Interposition of soft parts.
Foreign bodies.

Vascular—

Sepsis, destroying the vital elements.
Sclerosis, the bone canals are closed and the cells imprisoned.
Atrophy, the vital elements disappear and only an earthy shell remains.
Fibrous tissue and cartilage cover over the bone ends and so imprison the vital elements.

Disease—

Infection, pyogenic or specific, tubercle, gumma.
New growth—
Fibrocystic disease, myeloma.
Sarcoma, carcinoma.

Space does not permit of the discussion of each of these causes, and I must be content to emphasise one or two points.

It often happens that several of these causes coöperate. Thus, in the fracture of the neck of the femur, it is difficult to fix the bones, and with the ordinary splinting there occurs mobility, associated with want of apposition and the interposition of part of the capsule of the joint. The proximal fragment has a very poor blood-supply and atrophy quickly takes place. Again in the case of the shaft of the humerus, the difficulty of efficient fixation is the prime cause of the frequent non-union. The bone ends throw out granular tissue or pro-callus, but constant movement prevents this bridging the gap. In the meantime muscle and fascia wrap closely round the bone ends, and each becomes clothed in fibrous tissue or fibro-cartilage. The importance of mobility as a cause of non-union has been obscured by the teaching of those who advocate early movement of a limb as conducing to rapid restoration of function. But there is no real conflict of opinion. Movement of the limb as a whole and of the muscles covering the fracture is good because it promotes vascularity. But movements of the bone ends against one another in the early period after a fracture certainly prevent union.

FIG. 1.

Ununited fracture of humerus, treated by plate, wires, and screws two years previously. (For result of grafting operation, see Figs. 4 and 5.)

One cause of non-union which is not uncommon is the inefficient application of screws and plates or wire in the treatment of a fracture. This, too, has been the subject of much misapprehension. It is commonly said that it is the malign influence of the foreign body which has hindered the vital repair. But this is not the case. Bones tolerate foreign bodies very kindly, provided they are fixed and give fixation. But it is the small plate which soon works loose, or the badly applied wire which works the mischief, causing friction, destruction of granular tissue, and non-union. It is easy to provide abundant proof of this both from experimental and clinical evidence. Fig. 1 is a good illustration of mechanical fixation which provides the maximum of frictional irritation with the minimum of mechanical rigidity. That there was nothing at fault with the bone itself is proved by the kindly way it healed after a bone graft (see Figs. 4 and 5).

VARIETIES OF NON-UNION.

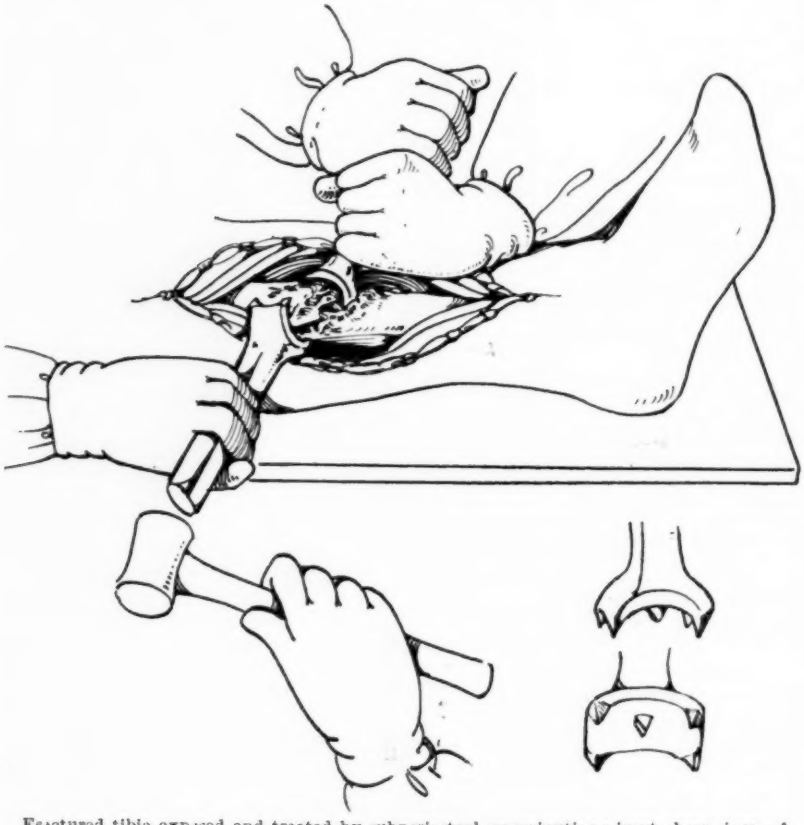
There are at least four different varieties of ununited fractures, and each variety has its own structural peculiarity and requires special treatment. They are:—

(*a*) *Delayed Union*—
Mere cellular inactivity.
No callus and little or no fibrous tissue.

(*b*) *Non-union*—
1. Fibrous union: Fibrous tissue or fibro-cartilage between and connecting the bone ends.
2. Pseudarthrosis: Bone ends eburnated and covered with fibro-cartilage. A joint cavity with capsule and synovial fluid between the ends of the bones.
3. Gap fracture: A piece of bone lost, the bone ends held apart by the companion bone. The bone is usually thin and atrophic.

It is not always possible to distinguish between the first and the second varieties—i.e., between delayed union and fibrous union, but the other two varieties—the false joint, with its flail-like mobility, and the gap fracture—are quite distinct. In merely delayed union the bone's ends are in contact, but callus does not form in such a way as to unite them. Such callus as there is is only the internal callus which seals up each marrow cavity. The X rays show no change in the bone except for a slight blurring of the distinction between the cortical and medullary layers. It is a state of cellular indolence and inactivity, which can generally be quickened into healthy vital repair by an appropriate stimulus. In fibrous union, on the other hand, the bone ends are thickened, eburnated, and greatly increased in density as seen by the X rays. The bone ends are covered in fibrous tissue or fibro-cartilage, whilst blood-vessels and osteoblasts alike are strangled or imprisoned in hard sclerotic bone. In making this distinction, however, it has to be borne in mind that the one condition leads to the other, and it is therefore not always possible to draw a sharp line of demarcation between them. From a practical point of view, delayed union is a condition which can be cured by non-operative or simple comminution methods, whilst true fibrous union will require open exposure with resection of the eburnated bone ends.

FIG. 2.



Fractured tibia exposed and treated by subperiosteal comminution; inset shows jaws of instruments used.

NON-OPERATIVE METHODS OF TREATMENT.

In all doubtful cases when not more than six months have elapsed since the fracture, it is worth while to give a good trial for a period of about three months to non-operative methods. Such a case is often presented by a fracture of the lower third of the tibia. Perhaps six months has passed since the accident, the broken bone presents distinct mobility but not much pain, and the X rays show no change in the bone ends except a little rounding off of the sharp contour. It is easy to make a mistake in such a case by treating it as if it were a recent fracture and putting on a plate. It may be true that if the fracture had been plated in the first place union would not have been delayed. But the essential fact of delayed union—viz., the cellular inactivity of the vital elements of the bone—now dominates the situation, and mere plating is more likely to make matters worse than better. To apply a plate requires that the bone ends should be partly stripped of their vascular covering and bored with holes, but then the bare area and the fresh holes are covered or plugged with plate and screws, a process which does much to hinder and nothing to promote callus formation.

There are three non-operative methods available and these may be used singly or in combination. They are: (1) voluntary movements, the fracture being protected with a splint; (2) passive congestion with massage; (3) injection of blood or blood products in and around the fracture.

In the encouragement of active movements the limb must be so protected by a case-splint that absolute rigidity without lateral movement is afforded to the bone, whilst the joints above and below are left free. The contraction of the muscles promotes hyperæmia and also pulls the bones together. In the case of the tibia the patient is made to walk, and this is a most efficient means of forcing the bone ends together and so promoting a frictional stimulus to callus formation. This type of treatment is very practical because it will enable most patients to resume their active work instead of keeping them in prolonged invalidity. The second non-operative method is the "damming and hammering" advocated by Owen Thomas. A piece of rubber tubing is placed round the limb above and below the fracture as tightly as can be borne without altering the arterial pulse and so kept for several hours daily. With this is associated a heavy percussion massage of the limb aimed at promoting tissue stimulation.

The injection of blood or of serum or fibrin has not been used much in this country, and its value is suggested chiefly by experimental evidence. It is really more difficult and nearly as painful as the open exposure of the fracture, and therefore to me it hardly seems worth while. Animal experiments are misleading in this matter. It may be true that blood injection round an injured bone will intensify callus production; but that is when the bone injury is recent and the bone healthy—there are plenty of bone cells and nothing to imprison them. But in an old fracture matters are different. The bone cells are locked up in a hard dense bone, the surface of which is sealed, and blood bathing the outside of such bone has very feeble power to liberate its essential and vital elements.

OPERATIVE TREATMENT.

Whenever union has been delayed for more than 12 months or when there is increasing mobility between the fragments associated with an X ray picture of rounded bone ends separated by a definite gap, then an open operation will be necessary if cure is to be effected. The actual nature of the operation will depend upon various circumstances, and it is a matter for skilled judgment founded upon experience.

The following are the principal considerations which must be taken into account before deciding upon an operation and in choosing the operative method: Age, health, and temperament of the patient; amount of disability, with and without a suitable splint; sepsis; existence of other lesions particularly those of joints, nerves, or blood-vessels; deformity; relation of the bone ends to one another—i.e., contact, overlapping, or gap; conditions of the bone ends, sclerosis, or atrophy.

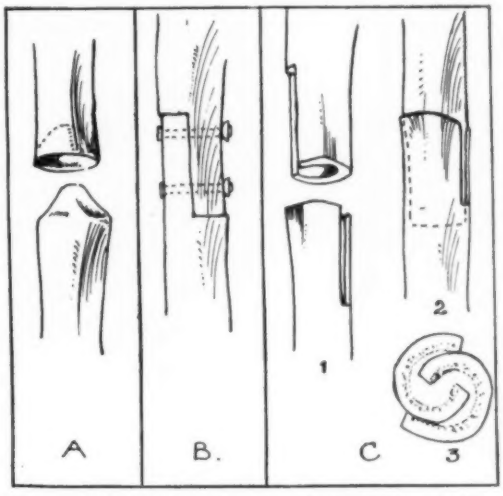
It must be borne in mind that the operation may be one of great difficulty or even danger, and that it makes a great demand upon the patient's vitality and powers of repair. It requires a patient who is keen, healthy, and young, in temperament if not in years. In some cases the amount of disability is very little. For many years Dr. Livingstone continued his active work as an explorer with an ununited fracture of the humerus, and I have known a busy general practitioner continue his work suffering from the same injury. Sepsis, whether actual or remote, is always a serious hindrance to reconstructive operations, although it may not prevent the adoption of the simpler revitalising procedures. The existence of serious complicating lesions of the joints, blood-vessels, or nerves may make it wiser to choose amputation rather than reconstruction, and this applies more particularly to fractures of the tibia.

Deformities should be corrected as far as possible before the fracture is dealt with, so that the freshly united bone is not subjected to any undue strain. The relation of the bone ends to one another should be carefully considered before deciding what type of operation is to be done. It is much better to aim at bringing the bone ends into contact and wide contact with one another, even at the sacrifice of length, rather than to depend upon bridging a defect with a graft. If there is much overlapping of the bone ends it is seldom possible or desirable to restore the bone to full length by traction—it is better to unite them side by side in a step-cut operation. If the bone ends are greatly sclerosed or much atrophied, they will repair slowly, and the mere addition of a graft will not supply the lost elements of vitality. The essential for success is the wide contact of healthy vascular bone surfaces, and if it is necessary to use a graft then this must have wide contact with healthy vascular bone at each end.

STIMULATION OF THE BONE ENDS.

Whatever may have been the first cause of non-union the ultimate conditions which make it permanent are want of contact and failure in vitality of the bone ends. If, then, the bone ends can be brought into wide contact without strain or deformity, it is only necessary to arouse their dormant vitality and union will take place. In the first place, all the dense fibrous tissue between the bones is removed, and raw surfaces of bone secured by scraping and chiselling. But such surfaces are usually indolent, bloodless, and sclerosed. They must be broken up so as to open up fresh blood channels and liberate the bone cells. Multiple drill holes or saw cuts may be made into the bones, or they may be chiselled into fragments. The latter is certainly most effective, because it is more drastic than drilling or sawing and it does not choke

FIG. 3.



Fitting methods: (A) Double cone. (B) Step-cut. (C) Sectoral interlocking: (1) Ends cut, (2) interlocked, (3) in section.

the fresh surfaces with the bone dust caused by drill or saw. But it is liable to split fragments clean off the bone, and such fragments will be very inert in the matter of repair. Recently I have adopted a modification of the chiselling method which is a sort of hammer and anvil procedure and aims at *subperiosteal comminution* (Fig. 2). The bone ends are exposed but the thickened periosteum over them is left undisturbed. The fibrous tissue between the bone ends is cut away by chisel and spoon. Then each bone end in turn is taken between the jaws of two spiked steel instruments, which are curved to fit the convexity of the shaft. These are then hammered together, using a heavy hammer, so as to crush the bone and periosteum, but not separating one from the other. Free oozing will, of course, result from this, and the two comminuted bone ends are left in the midst of a hæmatoma over which the soft parts are carefully sewn in several distinct layers without drainage. The limb is put up in a case-splint and active exercise taken as soon as possible.

I would advocate such treatment for those cases in which union is merely delayed without gross change in the bone ends. It is simple and free from any risk except that of failure. If it fails it does not prejudice the success of a grafting operation done later.

SHAPING AND FITTING OPERATIONS.

But in all cases of definite non-union, the bone ends are so unhealthy that they must be not only cut into but cut away so as to secure a wide contact of raw surfaces of fresh bone. And this should be done in such a way as to fit and fix the ends together. Four things are necessary: Fresh bone—i.e., provided with blood-vessels and osteoblasts, wide contact, close apposition, and firm fixation. Whether it is that the osteoblast will not venture out to any distance from its bony origin, or whether an osteoblast ceases to lay down bone when it is at a distance from its parent bone, is not known, but the fact is undoubted that new bone is very rarely formed except in the close neighbourhood of existing bone. Therefore if fresh bones are

fitted and fixed firmly together they will unite into one solid bone, whereas if they are in loose apposition they will only become tied together by fibrous union.

The actual shaping of the bones after sclerotic tissue has been cut away should be adapted to the condition of the bones, the shape of the fracture, and the advisa-

FIG. 4.

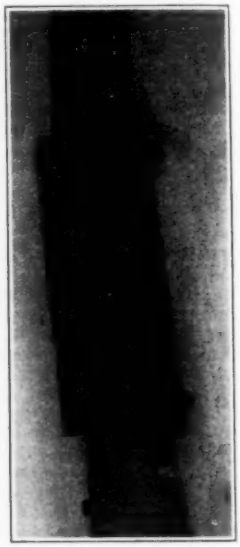
FIG. 4.—Fractured humerus (same case as Fig. 1) treated by autogenous intramedullary graft fixed by "split-and-thrust" method. One month after operation.
FIG. 5.—Same case as Fig. 4. Two years later.

FIG. 5.

FIG. 6.

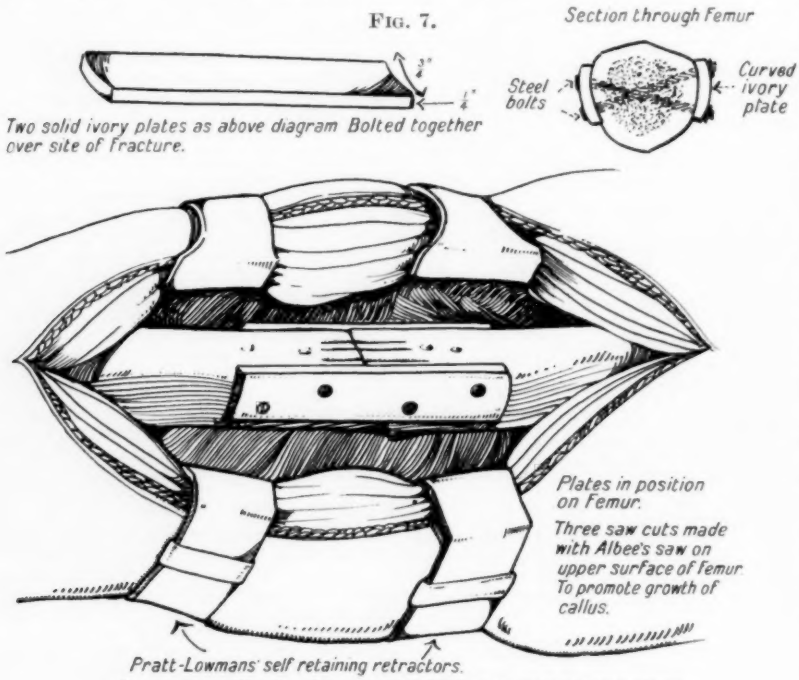
FIG. 6.—Ununited fracture of femur treated 12 months previously by inadequate plating.
FIG. 8.—Same case as Fig. 6. After operation, by a pair of ivory plates, bolted together.

FIG. 8.



A good illustration may be given from the joinery of a cabinet maker or carpenter. In such work all joining is done by accurate fitting. If glue is used, it is only to fix accurately apposed surfaces and not fill up cracks or deficiencies. No more should be asked of the reparative callus than a carpenter asks of his glue—i.e., to knit together surfaces which truly fit and are firmly fixed.

FIG. 7.


Section through Femur
Steel bolts
Curved ivory plate
Two solid ivory plates as above diagram Bolted together over site of fracture.
Plates in position on Femur.
Three saw cuts made with Albee's saw on upper surface of femur To promote growth of callus.
Pratt-Lowmans' self retaining retractors.

Same case as Fig. 6. Operation by bolting on pair of ivory plates.

bility of shortening the bone. Thus transverse fractures may be shaped as a double cone and fixed by a peg or a plate (Fig. 3, A). Oblique fractures may be step-cut so as to give a wide overlapping and fixed by bolts or bands (Fig. 3, B). Or an atrophic bone may have a piece taken out of its circumference and then be made to interlock with its fellow by engaging one edge of each bone in the marrow cavity of the other, a device which may be described as sectoral interlocking (Fig. 3, C).

It will be noted that all these reconstructive operations involve the shortening of the bone. This is of no great importance in the humerus. In the femur it is better to have a short strong leg than an ununited fracture. It is wise not to attempt full elongation of the thigh bone. It may be given one week's traction by a 25 lb. weight applied by a transfixion pin, and then at the operation the bone should be joined with some overlapping. It is dangerous on account of shock to pull the leg out to its full length, and it is fatal to the fixation if it be put up under strong tension. In the forearm and lower leg the fitting operations usually involve an osteotomy of the companion bone. Having fitted the ends together they certainly should be fixed. Such fixation may be by metal bolts, ivory screws, bands, or wire, or in many cases tendon ligatures, silkworm gut, or stout silk will

suffice. If metal fixation can be dispensed with, so much the better, but it is absurd to make the non-use of metal sutures a guiding maxim of bone surgery. Having fixed the fitted bones together by proper sutures the limb is immobilised by an external splint or plaster-of-Paris.

To recapitulate the essential points. Secure fresh bone by cutting away the unhealthy ends; provide wide contact of the fresh bone surfaces by accurate fitting; ensure close contact by proper sutures of which the metal bands and bolts are the most reliable; and get proper prolonged fixation by an external splint which must be worn for three months at least.

BONE-GRAFTING OPERATIONS.

The ideal and obvious method of treating ununited fractures is by putting in a bone graft. But it is well at the outset to realise that this method has very definite limitations, and that the conditions for success are very exact.

A piece of bone cut from the living bone of the patient is endowed with very limited vitality. It has living bone-cells, but for the most part these are locked up in the depth of the dense skeletal tissue. It has blood channels cut off from the active circulation, and it has a strong rigid frame which can be used as an internal splint or strut, whilst this framework is porous and is thus capable of acting as a scaffold work into which new bone tissue may penetrate from neighbouring active bone. It has no power of independent growth, and if it is placed in any living tissue other than the skeleton it rapidly withers away. Its power of producing new bone is very limited, and by many authorities is considered non-existent. When used to repair a defect in a long bone it can act in four ways. First, as an internal fixation splint; second, as a strut by which continuity being restored to a broken bone, the latter is provided with a functional stimulus; third, as a scaffold, in and around which new bone is built up; and fourth, as a source of new bone. The functions of the graft as an agent of fixation and osteo-conduction are clear and obvious, whilst that of osteogenesis is problematical. But a piece of dead bone will carry out the function of fixation and conduction, and it often becomes a question whether it is worth while using living bone just for the sake of its osteogenetic power. If a gap has to be bridged, then living bone must be used for the graft, but if the pieces of the broken bone can be brought into contact and the graft buried in living bone, then dead bone may be used, and should be used, if greater strength is demanded than can be provided by a live graft.

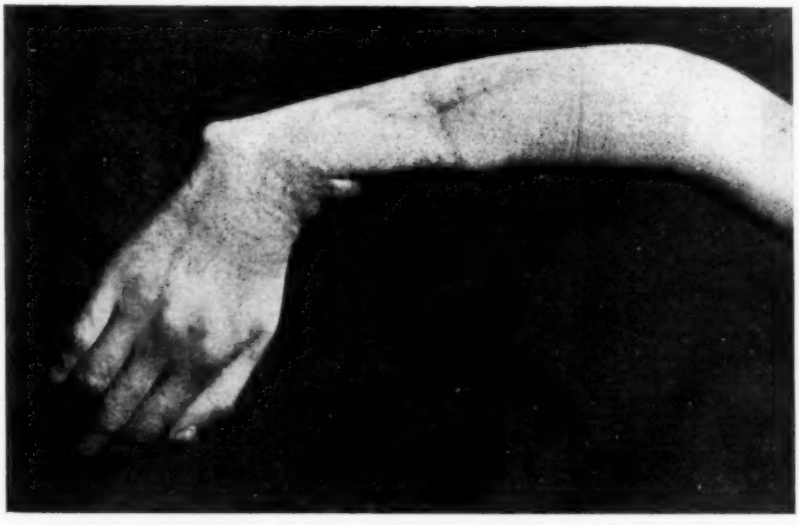
Exactly the same principles apply to the fitting and fixing of a graft as have been laid down for the fitting and fixing of the bone ends of an ununited fracture. That is to say, wide contact with live bone, firm fixation, and efficient immobilisation. And if the graft is used to bridge a gap it must be as stout and as strong as the bone it has to replace.

An autogenous graft is usually cut from the inner surface and crest of the tibia, which in an adult is capable of providing a piece of bone 8 in. long, ¾ in. wide, and ½ in. thick. A motor-driven circular saw

FIG. 10.

Same case as Fig. 9 after transplanting ulna into radius.

FIG. 9.



Gap fracture of radius resulting from gunshot injury in which bone grafting had twice failed.

FIG. 11.

Same case as Figs. 9 and 10. X rays three years later. Strong working hand.

cuts the graft quickly, neatly, and with precision, and I have seen no evidence that the use of this instrument produces any interference with the vitality of the graft. It is not essential to take periosteum with the graft, although I think it is an advantage, because the attached membrane will help as a medium of vascular exchange between the graft and the tissues of the bed into which it is laid.

The fitting of the graft into the broken bone may be carried out in various ways, driving it into the marrow cavity, embedding it in the surface, or by combining these methods, placing one end in the medullary canal, and fixing the other in a slot cut in the cortex.

Intramedullary Grafting.—If a bone graft of suitable size and shape be driven into the marrow cavity of a tubular bone it will rapidly become consolidated with the latter. I think this admits of no doubt, and yet intramedullary grafting has fallen into undeserved disrepute because of the technical difficulty of placing the graft tightly in each fragment. This can be accomplished in various ways. The graft can be driven through the end of the bone so as to nail one fragment to the other. This is possible for a fracture near either extremity of the humerus or for one at the proximal end of the femur or ulna. Or it may be driven into one fragment, whilst the other fragment is split to receive it and then tied together with wire or silk (Figs. 4 and 5). In dealing with a gap fracture, the graft is shaped like a cricket bail, one end being driven into one fragment whilst the other is manœuvred into position by angulating the other fragment out of the wound and slowly straightening the bone whilst the graft is engaged in its cavity. Or the graft may be made in two pieces, one is driven into the marrow cavity of each fragment, and the two grafts are then fixed together. Of these various devices the thrust-and-split method is the most satisfactory, because it gives the greatest contact between the graft and the host bone.

FIG. 12.

Specimen from the Museum of the Royal College of Surgeons (a femur which has been grafted). This specimen shows (1) no contact between main fragments; (2) inadequate size of graft; (3) inadequate fixation.

Cortical Inlay Grafting.—In this method a slot is cut in the surface of both fragments of the fracture, and into this slot is fixed a graft which is made to fit accurately into the slot. The actual fitting is facilitated by using an aluminium plate as a template to measure the size both of the slot and the graft. It necessitates a very free exposure of the broken bone, because at least one-third of its length should be involved in the grafting operation in order to give strength and rigidity. It is particularly suited for the tibia or one of the forearm bones, because it supports one side whilst the other side is held by the companion bone. The graft is fixed in its bed by accurate fitting, by sewing the soft parts over it, or by bone nails or screws.

Use of Beef Bone or Ivory Pegs or Plates.—If the graft has to be buried in living bone then a strong dead graft is often better than a weak living one

FIG. 13.

Fractured radius resulting from gunshot injury. Shows graft too small, no contact, and no fixation.

FIG. 14.

Same case as Fig. 13 with graft of adequate size and fixation.

FIG. 15.

Same case as Figs. 13 and 14. Two years later.

Thus, in a fracture of the neck of the femur an ivory or bone peg used as a nail driven in through the great trochanter will give a good result, provided that accurate apposition of the fractured surfaces without interposition of soft parts be secured. In an ununited fracture of the femur, where it is desirable not to shorten the leg by a step-cut operation, it is difficult to get a living bone graft strong enough for the purpose. In this case a pair of ivory plates (Figs. 6, 7, and 8) may be used or else a tibial bone graft may be placed on one side of the fracture and an ivory plate on the other and the two plates then bolted together.

SUPPLEMENTARY BONE-GRAFTING METHODS OF DOUBTFUL VALUE.

There are certain methods of bone grafting, founded chiefly on theoretical considerations, which must be considered briefly. These are the use of so-called wafer grafts formed of periosteum with a thin layer of underlying bone, and the employment of bone chips. In my own practice and in experimental work both these methods have invariably led to failure. I would therefore relegate them to a very subsidiary rôle in the treatment of ununited fractures. It is possible, when the fracture has been fixed by one of the above-mentioned methods, that by wrapping a piece of periosteum with adherent chips round the fracture, or by packing in little bits of bone taken from the crest of the ilium the consolidation may be hastened, but I am not clear even on this point. Certainly the process of absorption is much more evident than that of callus formation.

Bone Shortening or Bone Substitution.—It not infrequently happens that more than one operation has failed to cure an ununited fracture. If this is the case with the forearm or the leg, there is another alternative to abandoning the case or submitting it to a case-splint or to amputation. This consists in shortening the companion bone, or substituting one bone for the other. In a gap fracture of the tibia a piece may be taken out of the fibula, sufficient to allow of the tibial fragments being made to impact or overlap. In a gap fracture of the radius, in which grafting has failed, the ulna may be divided and the proximal portion implanted into the distal part of the radius (Figs. 9, 10, 11). This gives a strong, straight arm, curing the radial deviation of the hand, although not permitting movements of pronation or supination.

CAUSES OF FAILURE.

Apart from certain conditions—e.g., sepsis, active or latent, or the presence of general disease or debility which prevents the success of any surgical procedure—the local cause of failure of operations done for ununited fractures may be grouped together under the following heads: 1. Inadequate contact of bone ends (Fig. 12). This may be due to the sclerosed bone or fibrous tissue not having been cut away or to the raw surfaces not having been fixed together efficiently. 2. Inadequate fixation of the fracture either by reconstructive operation, graft, or splint. 3. Inadequate grafting in respect of the graft being too small, having no contact, or not being fixed to the host bone (Figs. 13, 14, 15). 4. Inadequate splinting of the limb after operation. 5. Excessive tension. If great force is used in reducing an old fracture there is immediate danger of shock, and later, risk almost amounting to certainty, of the mended fracture being pulled apart by the tension to which it is subjected.

The successful treatment of an ununited fracture will often test your skill as a mechanic, your technique as a surgeon, and your patience and optimism as a mender of the maimed; but the results of success are well worth striving for, because they are nothing less than converting a cripple into a whole man, and if in accumulating the experience upon which this lecture is founded I have made many mistakes and encountered many failures, my sincere hope is that you may avoid the mistakes and be rewarded by unvarying success.

An Address

ON

AVENUES IN MEDICINE.

Delivered at the Opening of the Winter Session of the London (Royal Free Hospital) School of Medicine for Women

BY SIR CHARLES SHERRINGTON, O.M., G.B.E., M.D. CAMB.,

PRESIDENT OF THE ROYAL SOCIETY.

ON the opening day of the session, with some here for whom it is the commencing of a profession, our thoughts turn naturally to questions of what that profession has to offer and what it demands. The perspective of the avenue along which the profession of medicine is reached has many interesting points as viewed from either end, though I can deal with but a few among them.

Here in this school I imagine all students enter the profession for no other reason than that medicine earnestly attracts them. That pledge of enthusiasm is a valuable asset for the student herself and for her teachers, as also for the school and for the profession. If we ask what ground there is for that enthusiasm, we may in the first place as practical people take this, that there are in the nature of things not so many callings open to women as to men, and that medicine can and does provide for women to-day a means of earning an independent living. The average annual earning of the medical practitioner in this country to-day is, I believe, put at between £500 and £600 a year. I see little to suppose that that estimate is not applicable to the woman as well as to the man practitioner. It is not, to my mind, a discouraging average in the era before us, which must perforce be one of national economy and fortitude.

It is an average which doubtless regards chiefly the general practitioner. Though general practice is the main path of the profession, there are other far from negligible though relatively exceptional ones. There is consulting work and there is specialist work. Some of those present here to-day brilliantly exemplify the success in these that is attained by women. There are also medical branches of Government service, and I need not name to you women, and from this school, who hold distinguished and responsible positions in those services. Dame Janet Campbell, a senior medical officer of the Ministry of Health, we remember, is a former student of this school. And there are, further, other public services as well, municipal and county posts. Perusal of the list of registered medical women, former students of this school, show how considerable a number of such posts are occupied by them.

But no more than does it satisfy man shall it satisfy woman to live by bread alone. Bread alone will not account for enthusiasm in the choice of medicine as a calling. Medicine has been termed with some justice a poor trade; but at the same time it is known as a noble profession. If we can justify this latter belief it is a truer source for enthusiasm. And it is a claim that can be justified on many grounds.

MEDICINE A PROGRESSIVE SCIENCE.

One of these grounds, though I do not say the main one, is yet a memorable one, and rises early to my mind. Medicine is not only an honourable art but a progressive science. In this respect it is an exceptional calling; indeed, among callings available for women it stands in this respect almost alone. Like it engineering is at once a science and an art; but engineering is not a profession available for women.

Those two professions, medicine and engineering, typify in the work-a-day world and for the thoughtful historian what the modern growth of science is doing in the modern world. It is to underrate their significance in modern life to suppose that these influences are increasingly changing merely the outer features of our surroundings. They are changing and developing the inner features also—the mental outlook and the range of life. And if to engineering science be due those of these changes which most catch the eye, to the advance of medicine are due developments as far-reaching and beneficent, and, to the initiated even more than to the uninitiated, fraught with meaning for human welfare, and are a source for enthusiasm. The swift forward moving of medical science in this present may assuredly stand to the future historian as the outstanding mark of the progress of civilisation in our era. A woman who has yearning to enter to the uttermost into some strong current of the abiding progress of the time we live in, and to feel and understand it, and to play a rôle in it, can rest assured that to enter medicine will give her opportunity for that, and in the fullest and most beneficent of ways.

At risk of repeating before an audience already well aware of them things that are commonplace knowledge even outside the profession, may I instance the speed of medical advance by mentioning a few outstanding points which medicine has attained within less than living memory.

Take the diseases distinguishable as infective. To know them as such is the beginning for the control of them. Tuberculosis and malaria, those two scourges of mankind, have in the last 45 years been opened to such control. A further key to mastery over infectious disease is to get disentangled hold of the particular infective agent. The last 40 years have seen that done for diphtheria, glanders, cholera, tetanus, Mediterranean fever, yellow fever, plague, dysentery, and syphilis. Through the long ages of its previous history medicine had travelled without in one single instance achieving such a step. Hippocrates, father of medicine, had he done so would have been reputed a god; more important, he would have changed the course of human history.

On the heel of such specific discoveries have followed the modern knowledge and employment of immunity, proving, if further proof were needed, the rightness of Jenner's vaccination against small-pox, by elucidating the principle on which it rests. Pasteur began to vaccinate—he called it so, in tribute to Jenner—against bacterial disease by inoculating with the specific bacteria attenuated. What lessening of human and animal suffering date from and because of that step of only 42 years since. In recent eloquent witness stand the statistics of control over typhoid obtained for the armies in France by vaccines introduced by Sir Almroth Wright and extended by Sir William Leishman. Then there is the whole relatively new subject of serology, potent for prevention, for remedy, and for diagnosis. Diphtheria has been largely robbed of its terrors, though Roux and Yersin's work on the diphtheria toxins dates to not 30 years back.

And the progress goes forward, with change, but no sign of halting. Thus, the intriguing bacteriophage, which seems a germicidal subgerm. Again, the new step of knowledge in regard to cancer, stressing the interaction of essential causal factors, and the yet unexhausted power of the microscope for discovery. The invisible viruses are beginning to be made visible.

And, infectious diseases apart, progress of the past five years has turned the position in regard to rickets. The enemy forces have been located. They are recognised as two—deficiency from diet of an elusive substance traceable to the plant world which is based on sunlight, and deficiency of sunlight itself. An era has begun when child-life can be saved from a crippling disability. And in this victorious campaign women have borne a conspicuously important and distinguished share. Then, again, the discovery of insulin came but three years ago, and it is now alleviating cases of suffering the civilised world over. Such instances, taken almost at random, surely justify enthusiasm.

It is difficult for the student or the medical curriculum to find time for all the student has to learn. Introductory science has perforce to be curtailed because it is introductory. Economy of time can be obtained by getting as much as possible of the introductory science done in ordinary school years before coming to the medical school. This is the more advisable because these scientific subjects are to-day essential to general education. We all know the disabilities, conversational and for citizenship, which adhere to otherwise educated people by reason of lack of school instruction in such science as should be part of common knowledge. But wherever and whenever the adjunct sciences are taught with a special view to medicine, it should not be forgotten that for application of them to medicine it is the principles not less than the ad hoc facts which are required. The former rather than the latter enable the student when she or he leaves tutelage to breast not only the scientific applications of that particular date, but to follow for herself professional developments of the future which shall depend on science. That ensures a progressive practitioner instead of maybe a reactionary one. I wish some time could be found in the curriculum for the teaching of the principles of scientific psychology.

And with regard to the sciences dealt with later in the curriculum, they are a part of medicine itself. Differentiated as they are necessarily and dealt with by separate specialist teachers, it is to be remembered that they are from the point of view of medicine essentially one, although separately designated. Therefore, as you study them the more you make them overlap and interlap—histology, anatomy, physiology, biochemistry, bacteriology, pathology—the better will you grasp all and each. Of reasons why that should be so, one is that disease is but disorder of health. Over and over again the normal and the abnormal merge one into the other by degrees practically imperceptible.

THE MEETING OF SCIENCE AND ART.

In medicine, two aspects—namely, those of science and art—meet; at their extremes they are clearly distinct, but their mutual boundary is untraceable. As to what science is and what art is, let me take refuge in saying that all definition is notoriously difficult and that comparisons are odious. Bandaging, I think, I have seen in some hands an art and not a science, and yet in others both an art and a science; and possibly in others a science but without art. Science pursues knowledge for the sake of knowing the how of a result. Perhaps Art uses knowledge for the sake of a result without caring about the how. Science has laws, which, unlike some laws, are unbreakable. Hence Mr. Bateson's wise advice, "Cherish your exceptions." In Nature every seeming exception is but obedience to another law. With Art laws are on another plane—even in the fine arts. The laws of the romantic school of yesterday were not the laws of the classical school of the day before. The laws of the Cubists to-day will not be the laws of the Futurists, perhaps Polygonists, of to-morrow. Hence medicine which has become scientific is more stable than medicine which has not. Fashions of bandaging may change, but the principle of asepsis abides. Science and art dovetail in medicine; that is the real point of importance, not any impossible attempt to distinguish them minutely. Art where skilfully efficient unconsciously adopts measures science would endorse. And it is a mistake to suppose, as seems sometimes done, that the divisions between science and art in medicine correspond with division between the laboratory and the ward. Science can enter into the handling of a case in ward or out-patient room as fully as into

laboratory observation or experiment. Last year the Harveian Oration by Sir Archibald Garrod and Sir David Bruce's Presidential Address to the British Association in Toronto pointed out that medicine, while owing much to science, has also given to science immensely. In medicine the clinical and the laboratory studies support and fructify each the other. They flourish together or but little. But the finance of both is difficult, and especially, I think, for the laboratory. Higher education belies the old precept that a venture which deserves success will pay its own way. Higher education never pays its own way. It is said that American colleges spend on each medical student £100 more than the fee receipts. Such a situation endorses and commends the appeal made by this school for a fund to endow some of its laboratory professorships, anatomy, physiology, and pathology. This is a University school, and its laboratories are in that sense University laboratories. Distinguished teachers direct them. Endowment is necessary for such Chairs. The eloquence of the circumstances ensures the success of the appeal; and I hope quickly, for the need is urgent. A fine lead was given last year by devoted friends of the school, including Lord Riddell, who has also so generously helped the hospital itself. And help for the physiological laboratory has come from the Augustus and Alice Waller Memorial Fund, a memorial especially appropriately connected with this school and with research. The laboratories of the school have already won repute as places of research. An element for success in research is the putting the right question to the problem. The astounding research capacity of Pasteur himself lay perhaps as much in asking the right question as in his genius for developing and ripening the latent possibilities of laboratory means. Splendid intention is futile if for the question it puts the time is not yet really ripe. This must be borne in mind in the coöperation for research between laboratory and clinic. Experience shows, I think, that with laboratory and clinic each puts its own question best, knowing its own best means. Both can have a common problem, as in the recent success with rickets, and both can have a common strategy; but the tactics of the two are better independent.

MEN AND WOMEN IN MEDICINE.

Increasingly noticeable in medical research is the tendency towards team-work—a change probably impressed by experience in the late war. In a research team each member takes one part and all parts simultaneously conspire towards a single aim. This plan seems destined to replace advantageously the individual less coördinated effort toward medical discovery in the past. Coöperation is a proper and happy counterpoise to the competition which is perforce so large a rule in life. Team-work accomplished the glorious cathedrals of a former age; in an age of scientific medicine it may rear spiritual edifices no less glorious. I fancy women combine readily for team-work, and are specially fitted to play in it an eminently important rôle, and preferably in coöperation along with men. The very contrasts between man and woman help each to eke out and amplify the powers of the other. Galton arrived at types of family physiognomy by compounding photographs of individual faces. To combine in that way faces of women and men doctors might yield a composite prophetic picture of the ideal physiognomy of the profession. Not that physiognomy consists in features of the face alone. Craniums also can, of course, be long or round. There are, as we all know, modest shoulders and shoulders that are arrogant, elbows egotistical or accommodative. These all both in man and in woman. Woman and man are not wholly unlike. There is something of man in woman, and something of woman in man. The existence of this school and its success show, I think, that woman's due and right place in medicine is won not by her aiming at man's particular qualities, but by her using and training to medical purpose the gifts of her own womanly nature. To me seems regrettable the London County Council's recent regulation that married medical women are ineligible for its medical officerships. I have seen it estimated that about 30 per cent. of medical women marry. That, however, is a lower percentage than is obtainable from the list of former students of this school.

The cause for which this school stands is assured. That women should enter medicine and practise it is but a further and most natural evidence of what we have been talking of—the progress of medicine. But those who go first often have to walk somewhat lonelily, and find their path less free than those who follow. This school does well, therefore, to remember with pious honour those who led the way. Social adaptations come slowly. An elder generation tends to hug old opinions. Truly progressive cannibals eat, it is said, their oldest relations. But I am not sure that that is a complete remedy. Reform is rarely facile. It is not, as Rousseau taught, a simple return to nature. Perhaps, like the ancients, he thought us descended from the gods. But after him came Darwin. It is a long ascent from the grimaces of the ape to the smile of Monna Lisa. But one sex has accomplished it, and it speaks to the comfort of both. A mere man, I have myself had homely reminder of mental kinship to primitive forbears. When my laboratory kept chimpanzees I used to pay a daily visit to them at large in their room. Once after such a visit, when I had just left and locked the door, I turned back again, pondering what the chimpanzees might do when I had left; I stooped and looked through the keyhole. A chimpanzee's eye met mine peering through the keyhole. The same thought had struck us both, both her and me—she, as a lady, had acted first. When the human community about you seems slow in development, recall my case. Surely it is encouraging that despite my mental resemblance to simian stock the convincing logic of your cause stands plain even to me.

THE TRADITIONS OF A MEDICAL SCHOOL.

But to return to this school with its tradition of noteworthy names in the past, and no less noteworthy still with it. One of the things that it has proved is this: that women are well able to fulfil the expanded social duties it trains them for. And the fulfilment of those duties involves more than solely the science and the art of medicine. Every case of sickness is as well as a problem for medical science and art, a fellow creature's suffering. Of all grounds ever taken surely the strangest is that of the man who when refused by a young woman resolved to enter medicine in order to harden his heart. The impression, if it exist, that medical routine tends to blunt feeling is wholly mistaken. Egotism may harden the heart, but knowledge never. Character is what counts. Medicine enhances compassion and instruments it by giving it further resources wherewith to help and comfort a sufferer. As to the danger from the alleged coldness of intellect, as medicine leans more upon science, pure science, it is true, is intellectual, and pure intellect is somewhat like that supreme instrument arisen from it, mathematics, which works best with the abstract—in vacuo, so to say. But at the bedside the "case" is always concrete, and rescues feeling. Moreover, though science may be infallible, not so its votaries, as none know better than they. Science then teaches humility, and humility is close to sympathy, and one essence of successful medicine is sympathy armed with understanding. Sympathy armed with understanding, that surely is a trait that medical women stand for. To those who possess that, what opportunities does not medicine afford of beneficence to the community. To those who by reason of enthusiasm for medicine are entering upon it here, I would affirm that their enthusiasm is well founded. I trust I have not kept you too long in arguing towards so self-evident a conclusion.

An Address

ON

TRADITION IN MEDICINE.

Delivered at the Opening of the Winter Session of the Middlesex Hospital Medical School

BY C. E. LAKIN, M.D., F.R.C.P. LOND., F.R.C.S. ENG.,

PHYSICIAN TO THE MIDDLESEX HOSPITAL.

THERE are three days in a physician's life which may be said to be unique. There is the memorable one upon which he is elected to the staff of his hospital, a day of unalloyed happiness and pleasure; then there is the day of gloom when the time limit sounds his departure from the activities of the hospital; and the third is one like to-day when he gives the introductory address and feels rather like the mariner about to cross the equator for the first time, hardly knowing whether he is quite likely to enjoy all that Father Neptune has in store for him, whether the crowd of onlookers will be sympathetic, and whether his performance may not end in catastrophe. Still it is the tradition of our hospital that this must be faced, and in confronting it one is naturally brought up against the question: What is there in tradition that it should have such a powerful hold upon us?

We are living in an age of rapid transition and of suspended judgments, and those who are familiar with Chekhov's Cherry Orchard, in which is seen depicted the pathetic inability of the older generation to cope with the pressing circumstances of the present, may well ask. But is not tradition crippling us on every side? One must freely admit that there are elements of danger in tradition, but that is not to concede that tradition itself is valueless. Without it chaos replaces order and experience never attains fruition. Each generation must be provided with a starting-point and for this continuity with the past is essential. But tradition itself is not stationary, it is always suffering change. Although at any one moment it may be said to be fixed, at the next it is not quite the same. It is in some degree subject to flux and possibly in increasing degree with the passage of years. It may be observed that the human mind, on the other hand, tends to become less elastic as our years creep on. With few exceptions the older we become the more conservative tends to be our outlook. To such an extent is this true that some see in this very fact the necessity of death in the economy of Nature. Death is Nature's way of evading stagnation.

Now the danger of tradition is found in its power of establishing a prevailing opinion which in itself is antagonistic to further advance. As long as the chief place in medical tradition is assigned to observation, experiment, verification, and induction, this danger is but slight. Medicine has no creed as such to preserve. Its system of knowledge is but the accumulation of facts which have been ascertained by the application of the scientific method to the study of the body in health and disease. By scientific method, if for one moment I may labour the point, we mean observation, experiment, and verification. It has been well said that the mind of Sydenham, interested in a sick child and humanely pre-occupied with its cure, did not, in so far as it functioned scientifically, operate differently from that of Galileo interested in the movements of the earth. Both alike reflected, verified, and generalised.

But tradition is more than medical lore and the sum total of medical science. Just as in another sphere we talk of a manner of living or way of life distinct from life itself, so in medicine there is a setting in which medical knowledge is enshrined. This is as difficult to describe as is the tradition of a public school or the esprit de corps of a regiment. Like so many of the finer things in life it evades explanation and vanishes into thin air as soon as one tries to take hold of it. It is this elusive atmosphere of which I would attempt to speak to-day to those of you who are about to start your medical studies. To dissect so subtle an influence were almost impious, but if we attempt it hero-worship, historic association, love of beauty, truth and goodness, and the tears and strivings of men will all find a place there.

Who can remain unmoved by the story of William Charles Wells? Wells was a medical man, who like so many others at the beginning of the nineteenth century, had taken to medicine as a means to a livelihood, in order to devote his spare time to the physical sciences. For save in mathematics there were practically no university chairs or emoluments in England open to students of biology, chemistry, or physics. In what follows I borrow freely from the account which Dr. Arnold Chaplin gives of Wells in his FitzPatrick Lectures, delivered before the Royal College of Physicians in 1917–18. Wells began his career in London penniless, and after 16 years of toil was unable to command an income of more than £307 from all sources. Ill-health dogged his steps, and in his forty-third year he was seized with a slight stroke and henceforth it was a grim fight against time to finish the work he had designed. In spite of these disadvantages he laboured on bravely in his humble lodging in Serjeant's Inn, known to few save five close friends, among whom were to be counted Matthew Baillie, David Pitcairn, and David Hume. The name of Wells will be for ever honoured, for he succeeded in investigating and establishing the laws which govern the formation of dew, leaving little to be added by subsequent research. Wells carried out his experiments in the garden of a Mr. James Dunsmore, a merchant friend of his, who lived in Surrey, three miles beyond Blackfriars Bridge. Thither Wells betook himself in the late afternoons, and using pieces of wool of known weight, weighed them again after they had absorbed the dew in various situations and under varying conditions of atmosphere. It is a melancholy picture, this last effort of his, labouring to finish his experiments by night in Dunsmore's garden and trudging home with dropsical legs in the early morning hours to record his results lest death should claim him ere his task was ended. Surely few investigators have battled more bravely with adverse conditions. When his work was accomplished he desired only the modest epitaph, "He tried to extend the bounds of knowledge."

> "Man with his burning soul
> Has but an hour of breath
> To build a ship of truth
> In which his soul may sail.
> Sail on the sea of death,
> For death takes toll
> Of beauty, courage, youth,
> Of all but truth."

Of such stuff is medical tradition made. Wells's medical investigations were chiefly concerned with dropsy and uræmia and have scarcely received the consideration they deserved. It may be remembered that Charles Darwin, in his historical introduction to the origin of species, gives to Wells the credit of having been the first to enunciate the principle of natural selection in a paper read before the Royal Society in 1812. The names of Thomas Young and William Hyde Woollaston occur to us as other instances of physicists who have practised medicine. Young, who was responsible for the undulatory theory of light, it is interesting to note, lectured in our hospital before the school had been founded by Charles Bell. There is a letter of Bell's which I feel I cannot pass by in silence, giving a picture, as it does of his early days in London:

"Coming to London with the resolution to fix myself here was certainly a desperate measure, for I had formed no friends, and absolutely did not know a human creature,

When I consider the few introductions I had—to men who could be of no assistance to me—I look back with something like a renewal of the despair I then felt. My first object was to introduce myself to the several schools, with the expectation of being taken as an assistant by one or other of the chief teachers. Cline and Cooper were lecturing in the Borough; Abernethy, with his assistant Macartney, in St. Bartholomew's; Sir William Blizzard and Mr. Headington in the London Hospital; and Mr. Wilson in Windmill-street, in the school of the Hunters.

"I could see that a great deal was to be done, but where to find a resting-place? How show my capacity for teaching or illustrating my profession?

"These days of unhappiness and suffering tended greatly to fortify me, so that nothing afterwards could come amiss, nothing but death could bring me to a condition of suffering such as I then endured. There was a little romance with it too. I found myself so cut off from the society I should have wished to cultivate, and which I thought I deserved, and so alone in this world, that I entertained myself with fancies as to what set of people, and what family, and what place, it was likely Providence was to unite me to.

"In short, I believe I was as romantic as any young man could be, although the prevailing cast of my mind was to gain better celebrity and independence by science; and perhaps this was the most extravagant fancy of all.

"I never thoroughly hated London while I could lose myself in it. I had a pleasure in wandering through streets I did not know; but at last it appeared to me to consist of insignificant parts almost infinitely multiplied.

"I was not idle, however, all this time. I had a subject of study always with me. I was preparing my Anatomy of Expression, and made some anatomical studies in the Westminster Hospital.

"I could not help regretting the noble fields that were everywhere around me for exertion in my profession, and which I found closed against me.

"One night I resolved to return to Edinburgh. I went to the opera, to leave the last pleasant impression of London. I could dwell upon my feelings of that night, but few could sympathise with them, and next morning I resolved to remain in London. I took a large ruinous house in Leicester-square, formerly inhabited by Speaker Onslow. When I went with my surveyor to examine it, I was somewhat appalled by his account; he was a great John Bull rough fellow. Leaning out of the window, and observing the walls out of their perpendicular, he said in a coarse familiar manner, 'Sir, you had better have nine bastard children than this house over your head.'

"In taking this step I was conscious I must withdraw myself from such society as I could have loved, and here I gave myself up exclusively to the teaching of anatomy. Such were my miscalculations, that my expectations of a large class were sadly disappointed. It was years before I had 40 pupils to lecture to.

"When I got into this house, the first night I slept in it I had put out the candle and was leaping into bed, when the floor gave way under my foot, and I found I had displaced the board. On examining this in the morning I discovered a tube under the loose board—it was the house where the Invisible Girl exhibited!

"A man brought up as I had been in Scotland has certain notions of respectability, which are very strong and very peculiar. I don't know that at any time I was more depressed than when I found the sort of house I had got possession of, but it was one of those absurd errors into which a stranger in London falls. Before taking it I had been provoked with the opinion of everybody I consulted about my plans, their lowest estimate being that of £10,000 to set me agoing. Even yet I am not rich enough to boast of my poverty."

While medical tradition transcends all geographical boundaries it is in our hospitals and medical schools that she has her special dwelling. A hospital and medical school is something more than a block of buildings where instruction is meted out to students. At Middlesex I have sometimes thought that I have caught sight of the genius loci—the prevailing deity—on the way up to my wards. He is an old man with a white beard and wrinkled face, but in his eyes is the twinkle of perpetual youth. He has usually been standing at the turn of the staircase or on the landings, and as our little procession to the wards approaches I have seen him put his fingers to his lips while all his attention is given to those behind me. It is as if he is picking out his votaries to entice them into his realm, to study with him clinical medicine in the wards of the hospital.

If the blood of the martyrs is the seed of the church, the devotion of the hearts and minds of Middlesex students is the glory of the school. A medical school is not a technical school, and it is because I wish those of you who are joining us for the first time to-day to know something of the spirit of the place that I have been speaking in the way I have to-day. Some of you have come from the older Universities and may, like the scholar gypsy, have walked by Godstow and Bagley Wood, and, unlike him, in high talk have discussed all things in heaven and earth, plumbing the depths of speculation in a world where speculation rightly takes the place of experience. Here, you are suddenly, perhaps too suddenly, brought face to face with reality and your university education continues with a difference. Take note of the motto of your hospital *Miseris succurrere disco*, and in learning to help the wretched you will see that you yourself are undergoing development. Read the legend over the entrance to the post-mortem room, *Hic locus est qua mors gaudet succurrere vitae*. Here is the place where death rejoices to help life and you will come to appreciate the amazing healing power of Nature even to the last. Scorn delights and live laborious days and you will find the world of knowledge has its enchantments. It is not the platform but solitude where true work is done, and I never tire when I feel that we are becoming a little Americanised of thinking how from a small ward of nine beds, with no special facilities, Vesalius taught surgery to Europe. Thank heaven! medical tradition at any rate has nothing to do with propaganda, publicity, and newspapers!

Do not be discouraged by the exactions of the profession you have chosen. The more conscientious may ask: Ought I not to let everything go save my immediate studies, since to me are to be entrusted the lives of my fellows? The question is sufficiently plausible, but the answer is emphatically No. You must first be a man and then a doctor. You must learn to live in the present and to understand the entourage and mental outlook of your patient, and how will you do this if you become simply immersed in study?

Middlesex man as I am, on an occasion like the present, I cannot end without paying homage to those of my friends and yours who so nobly upheld our hospital traditions in the late war. In dying they put on immortality, being silent they yet speak, and have left behind an imperishable memory that needs no memorial:

> "Sons of this place of you let it be said
> That you who live are worthy of the dead,
> These gave their lives that living you may reap
> A nobler harvest ere you fall asleep."

SPA TREATMENT FOR PANEL PATIENTS.—At the autumn meeting of the British Spa Federation held last week at Woodhall Spa the question of spa treatment for insured persons suffering from rheumatic diseases was further considered. British spas are, it is stated, unanimous in their desire to see the benefits of mineral water treatment made available for those who have hitherto been unable to afford it, and a special subcommittee consisting of representatives of Bath, Buxton, and Harrogate was appointed to work out practical details satisfactory alike to the insured patients and their doctors, and without interference with the routine and comfort of the ordinary visitors.

LEEDS VOLUNTARY HOSPITALS COMMITTEE.—This newly formed committee has already induced 1085 firms in the business centre of Leeds to join the scheme; a further 3000 have still to be heard from. The promises of subscriptions thus obtained aggregate close upon £7000. A large number of insurance companies and companies owning multiple shops have refused to come in, on the ground that they have so many branches in different towns that to subscribe to the local charities in each would constitute a heavy drain, and that they could not subscribe in one place and not in another. It is, however, felt in Leeds, and probably in other towns, that firms who drive out local shopkeepers who were subscribers to hospitals ought to be prepared to "pay their footing."

An Address

[ABRIDGED]

ON

THE MEDICAL CAREER.*

BY SIR HERBERT F. WATERHOUSE, M.D. EDIN., F.R.C.S. ENG.,

CONSULTING SURGEON TO CHARING CROSS HOSPITAL.

[Sir Herbert Waterhouse began by saying that for over 33 years he was a member of the staff of the hospital and of the medical school. During that time, at various periods, he held every position open to a surgeon and also those of dean and of chairman of the medical school and the hospital, and its branches were amongst the greatest interests in his life. The school was to be warmly congratulated on its present Chairman, Sir George Verity, whose success in freeing the pathological department from debt was already sufficient claim for gratitude. He continued:]

I can honestly congratulate you on your choice of a profession because you have chosen one in which you can help your fellow men and women, can lessen their burden of sorrow and suffering, can earn their esteem and affection, and can assure yourself of a fair competence when the time comes for you to retire from practice. If riches had been your quest you would have gone in for trade, certainly not for medicine. In joining the medical profession you can, at the most, expect moderate financial success, but this is, I am convinced, more safely to be reckoned upon in the profession of medicine than in any other of the great professions. The sick we have with us always and there is ever work for a good doctor. We have nothing comparable to the briefless barrister or to the clergyman, who, though an old man, still remains a curate. But if an adequate reward for your labour may fairly be expected in our profession, your preparation is far longer and far more strenuous and exacting than that for any other profession. You will, for the next five years or more, have to "scorn delights and live laborious days" if you are to attain that standard of knowledge of your professional work that alone can fit you to take charge of the lives of your fellow men and women. In some other professions a fair amount of knowledge may suffice to ensure success; in ours nothing short of the best is justifiable; the stakes for which you play are human lives, sacred in the sight of God and man, and this is the day on which to determine that you will do your utmost to fit yourselves for your high calling.

The school you have joined will do its part to help you, and, if you equal the record of the best students of this school in recent years, you will have every reason to congratulate yourselves. Within four years I was fortunate in having as my house surgeons three of the most brilliant young surgeons I have ever known—Messrs. W. S. Fenwick, Norman Lake, and C. J. Marshall—all Charing Cross men. Among the distinctions gained by this brilliant trio were two gold medals at the final M.B., B.S. London examination, one gold medal and one qualified for the gold medal at the M.S. London, one gold medal at the M.D. London, the degree of D.Sc. London, and the Murchison prize in clinical medicine.

I doubt if any medical school in London ever, in so short a period of time, produced three abler men. Mr. Fenwick, to our extreme sorrow, was forced by ill-health (now happily recovered from) to leave us, but Messrs. Lake and Marshall fortunately remain and both are sure to add further to the reputation of the hospital and of the medical school.

It is a pleasing fact that, in the study of medicine, each succeeding year is less of a drudgery and more interesting than the previous year. During your earlier years you will find the study of anatomy wearisome and dissecting somewhat unpleasant. I urge you not to neglect this very foundation of professional knowledge. A good knowledge of anatomy can only be acquired in the dissecting room, and careful dissection alone will teach you how to find your way about the human body. One of my old teachers used to say that surgery is merely "common sense applied to anatomy" and there is more than a germ of truth in this dictum.

With regard to the subject of lectures you will hear it stated, not infrequently, that lectures are useless. I certainly do not hold this view, though I admit that I thought they were over numerous in my student days. The greatest merit of the 9 o'clock lecture is to compel an early start, and I would advise you to keep your reading always a few days ahead of your lectures. If you hear a lecture on a subject which is new to you, you will of necessity fail to assimilate many points. If you have read the subject up a day or two previously you will derive infinitely more benefit from the lecture. It is only when you start your clinical work at the hospital that you will begin to appreciate the real fascination of the study of medicine. Your earlier years of study will have been the somewhat tedious preparation for the foundation of your clinical knowledge and you will now be entering on your real life's work. I would advise you to attend your physician and your surgeon in all his visits to the hospital; the student who flits from one clinical teacher to another will doubtless learn much of value, but he will not see the same cases treated throughout the whole of their stay in hospital, and will not attain the same personal knowledge of disease and its treatment. If you are constant in attendance upon the teacher of your choice, you will, insensibly, follow him in his mental processes and will find yourself doing almost instinctively what he would do in like circumstances. I can speak from experience. I had the good fortune to be house surgeon to one of the greatest surgeons of all time—the late Sir William Macewen. For six months I studied his great intellect as closely and as devotedly as I was able to do, and, in later years, I have often found myself doing something almost instinctively, and, when I pondered over the question, I found that I was following the example of my great master.

During your final year I would urge you to devote particular attention to the special departments, particularly to those for diseases of the eye and of the throat and ear. These important branches of surgery are usually neglected by students to the detriment of their patients in later years. These remarks apply particularly to diseases of the eye, in some of which a few hours delay in instituting appropriate treatment may result in permanent damage to the sight. It has been said that the fear of examinations is the beginning of wisdom for the medical student. If every surgical examination paper contained a question on diseases of the eye, throat, or ear, these important subjects would soon cease to suffer neglect. As soon as you have qualified and registered, you will do well to join one of the medical defence societies. While you will find the large majority of your patients grateful and appreciative you may come across one who is cantankerous and inclined to litigation, and such persons have no difficulty in finding solicitors to encourage them. They seem to expect that bad fractures into joints should always give perfect results and, if they are disappointed with the issue, they blame, not the injury, but the unfortunate doctor. Such people do not sue their lawyers or stock-brokers when their advice has turned out badly. They seem to specialise in actions alleging negligence against their medical adviser. I have, for some time, been a Vice-President of the Medical Defence Union, and can tell you that 30 members, on an average, seek advice and assistance of the Union at the meetings of its executive, frequently after the receipt of a lawyer's letter alleging negligence. The vast majority of such complaints have no foundation and are

* Delivered to the students of Charing Cross Hospital at the opening of the Winter Session.

disposed of without further trouble. Everyone makes mistakes except the fool and the liar; the former cannot see his mistakes and the latter denies them. In any event it is a great relief to know that you have behind you powerful support and protection, and that you are insured against any possible financial loss in the unlikely event of a verdict being given against you. From close personal knowledge I beg you not to neglect to join immediately one of these protection societies.

Next, I strongly advise you to try to obtain a resident appointment as house surgeon or house physician (or preferably as both) in your own hospital, or, failing that, in another large institution. It is impossible to over-estimate the value of such a post. Not only will you see a large number of interesting cases, but you will have the advantage of making your diagnosis and of forming your opinion as to how each case should be treated, and then of having your views confirmed or corrected by your senior officer. I have never known anyone consider as wasted the time spent in holding resident hospital appointments, but I have, over and over again, heard men regret that they had failed to take advantage of the opportunity of obtaining such posts. Having, as I hope, spent a profitable year as a hospital resident, I would now urge you to study, for at least one session, abroad. When I was a student, in the late 'eighties, it was a very usual thing for a recently qualified medical man to devote several months to study on the Continent. I had the good fortune to spend a winter session at the University of Göttingen. This time of foreign study widens a man's mental outlook and helps him to get rid of many of the traits of our insularity. I found it most helpful and would earnestly recommend it to your attention. It is, moreover, an enormous advantage to a medical man to have a sound knowledge of French and of German. I have read most French surgical text-books and several in German, and I can testify to the advantage I have derived from them. I would advise you, throughout life, to continue your study of these two languages, so important for scientific medicine.

If you follow out the course I have above indicated you will be well equipped for your life's work.

Some of you will, doubtless, strive to become specialists, but the large majority will be content with the rôle of general practitioner, and the really good general practitioner is the highest development of our profession. It is comparatively easy to know practically all that there is to be known about one branch of medicine. It is far more difficult to know, as some first-rate general practitioners with whom I am acquainted certainly do know, almost as much about every branch.

Among my personal friends two of the ablest are general practitioners in South Hampstead. One is a doctor of literature, of laws, and of philosophy of the University of London, in addition to holding a doctorate in medicine. The other is an M.D. London, F.R.C.S. Eng. On the many occasions I have met my two friends in consultation, I have always felt that they knew about as much of surgery as myself and more of every other branch of medicine. I can safely say that I have learned from them far more than they can have learned from me. If these able men are content to remain general practitioners you may well be so.

For what are the requirements that go to make first-rate general practitioners? There are three desiderata: (1) A thorough knowledge of medicine in all its branches; (2) the faculty of inspiring confidence in your patient; and (3) sympathy.

Granted all these three, a successful and beneficent career is a certainty, and lack of any of them will gravely hazard your usefulness. Obviously the most important is the first, but the faculty of inspiring confidence is an essential requirement, and is most helpful to your patients.

How often do we not hear it said: "I have no confidence in Doctor X." Or: "Doctor Y has assured me that I shall pull through all right, so I am quite happy." Poor Doctor X and fortunate Doctor Y. The latter may have less knowledge than the former, but he has his patient's confidence, and that, in many cases, is so often half the battle. We all know men who inspire much confidence and deserve little; men, who, judged professionally, would be weighed in the balance and found wanting—and we know, also, men of brilliant intellect who can make no real headway in practice because they lack this faculty to inspire the confidence in their patients. It is partly a gift, but it is a gift, in a large measure, capable of development. I wish to impress upon you that before you can expect to inspire confidence in others you must have confidence in yourself, and this can only come with knowledge. If you have full confidence in your diagnosis and treatment it will be easier to impart this confidence to your patient. Strive always to gain the confidence of your patient, even from the time you are a dresser or clinical clerk. If you succeed with the charwoman from the slums you will not fail later with the countess in Mayfair. I would venture to urge upon you the importance of learning to express your opinion shortly and to the point. Nothing will help you more to attain this object than joining in the discussion of your medical and debating societies. Here you will learn to say what you have to say clearly and accurately, well knowing that you will not escape criticism from your fellow students should you fail to do so. In this way, as in many others, you will find the best of your fellow students among your best teachers. Remember always never to treat your patients as if they were fools. The vast majority of them are not, and they, during their time of illness, have plenty of leisure to ponder over what their doctor has said to them. The danger of being too chatty is that you may forget what you have said on a previous visit and may say something that may seem to contradict a statement previously made by you. When you are certain you are right say little, when uncertain say less.

Sympathy is the third of the desirable qualities that go to make up my ideal practitioner of medicine. It must, however, be sympathy combined with firmness, and mere sentimentalism is of no use. You should convey to your patients not that your heart bleeds for them, but that you are genuinely interested in themselves and their maladies; that, for the time being, theirs is the most important case you have under treatment; that you mean to devote your best endeavours to its cure and that you bring encouragement and hope of recovery from the illness. But blend your sympathy with firmness and decision, and remember that kindness and tenderness are duties that strength and health owe to frailty and sickness.

I have now come to the end of my advice to the new entrants, who are starting on a journey that is strenuous and exacting. Some, but I hope very few, will fall out by the way, but be certain that patient, intelligent effort will always be successful. The medical profession is one which offers joys that are worth gaining and that no other can afford.

ALEXANDRA DAY.—The collections on Alexandra Day (June 10th) produced £45,088, and the expenses to £7635, £5940 of which was the cost of the roses made by cripples. Queen Alexandra has earmarked £10,419 for institutions in which she is especially interested, and £27,555 will be distributed among various hospitals and charities.

THE LATE R. T. HUGHES.—Robert Thomas Hughes, M.R.C.S. Eng., L.R.C.P. Lond., formerly in practice in Higher Tranmere, died suddenly on Sept. 28th. He studied at Owens College, Manchester, and at University College, Liverpool, and qualified in 1895. He was medical officer of the Birkenhead Union and one of the best known medical men in the Tranmere district. He was a Lieut.-Colonel in the R.A.M.C. (T.) and saw lengthy service during the war. Dr. Hughes was in his fifty-third year and leaves a widow, four sons, and a daughter.

STABLE NERVOUS CONTROL IN RELATION TO FLYING EFFICIENCY.*

BY MARTIN FLACK, M.B., CH.B. OXF.,
GROUP CAPTAIN, ROYAL AIR FORCE MEDICAL SERVICE.

(From the Medical Research Laboratory, Royal Air Force.)

A MEETING such as this affords opportunity for discussion of the conclusions reached by those who for several years past have been concerned in the study of the human machine in relation to flying. No doubt, considerable difference of opinion may exist as to what are the chief characteristics which make for efficiency as a pilot, and, in consequence, on the best methods to be employed for the selection of personnel for piloting duties. It may be that such difference of opinion, if it exist, is due in part to difference in racial temperament and so forth, therefore it is not suggested that the conclusions formed in respect of the British are necessarily applicable to pilots of other nationalities. Such a conclusion could only be definitely reached if the same characteristics were found in the exceptionally fit and able pilots of all countries. The method of investigation pursued in Great Britain has been to study the characteristics of the most satisfactory pilots selected by the executive, and to contrast the results so obtained with pilots who have not been so successful or who have definitely been unsuccessful.

The main point of this paper will be to emphasise the fact that all-round success in flying is definitely associated with stability of nervous control, particularly of subconscious nervous control, and that in the selection of personnel for flying duties particular attention must be paid to this point.

Under the term "all-round success" we may group: (1) ability to acquire the art of flying; (2) physical and nervous endurance for repeated flights at high altitudes and flights of long duration; (3) flying temperament, which it is not proposed to discuss here.

Visual Efficiency.

In acquiring the art of flying the sense of vision and the power of correct neuro-muscular coördination of the limb muscles are of the greatest importance. In respect of vision the point on which it is desired to lay the greatest emphasis is the fact that binocular or better "bifoveal" vision, the term suggested by Sir Arthur Keith, is of the greatest importance. Such vision cannot be obtained unless there exists good balance of the eye muscles. Although this balance may in a large number of cases be destroyed by occupations which call largely for the use of one eye—e.g., close instrument work—microscope, sextant, slide-rule, &c.—it is even more important to recognise that in certain candidates there exists a lack of eye muscle balance which has no such cause, but is in reality an expression of unstable nervous control of the eye muscles. This instability is of great importance, particularly when associated, as it very frequently is, with other signs of subconscious nervous instability, since the subject is unlikely to fly successfully. He will be prone to erratic landings and is likely to break when exposed to hard work. The above conclusions are based on the excellent work of Wing-Commander Cecil Clements, of the Royal Air Force Medical Service, who, in suitable cases, has been successful in correcting this defect by special ocular muscle exercises, thereby converting erratic landers into successful ones.

Muscle Sense.

As experience in flying grows, the pilot, in addition to employing the sense of vision, relies also for the formation of judgments upon the "feel" of the control column, rudder bar, and seat. These sensations have their origin in impulses from the muscles, joints, and tendons. Not only do such sensations aid the pilot in forming an idea of his position to the machine and the nature of the evolution which it is executing, but upon these nervous impulses arising from the muscles, joints, and tendons depends the harmonious and smooth functioning of the muscular groups by means of which the pilot exercises control of his machine. The importance of these proprioceptive stimuli in relation to flying has not altogether been fully appreciated. Next to vision, therefore, these sensations are of the greatest importance to the flier. Such was adduced by the careful questioning of pilots, in respect of the sensations by which they fly, but the work of Garten has demonstrated the fact experimentally. Garten found by the use of a tilting chair that when blindfolded and at rest (in contrast to the rapid movements of an aëroplane), the main source of information as to our position in space was due to deep muscle sensation. All people are not endued with the same sensitivity of perception, but deaf-mutes were equally as expert as normal individuals. When the weight of the body was removed by immersion up to the chin in water, the sensitivity of perception was greatly decreased. Strong cooling of the skin of the heels and soles of the feet, and in one case injection of novocaine, caused no falling off of accuracy of perception of tilt in the tilting chair.

These experiments indicate that the so-called otolithic functions of the semicircular canals exert but little effect in affording information as to our position in space, although it is not denied that their integrity, whatever be their exact function, is of importance for aerial work, probably for the exertion of steady subconscious neuro-muscular control.

Tests for Muscular Coördination.

To judge whether a man has sufficient coördinative skill of the limbs for flying, actual flying is undoubtedly the real test; but this is expensive, involving much waste of instructors' time as well as damage to machines. In this respect, however, a certain amount of guidance can be offered by the medical side, but it must be made clear that the mere testing of psychomotor responses is not in itself sufficient. Although such tests have value—that is, a steady stable response is good and an erratic unstable response is bad—too much attention cannot be paid to the results, since the manipulative effort—raising or depressing one finger—bears no relationship to the manipulations of flying, and since, also, the coördination of eye, hand and leg, which plays so important a part in the control of the aeroplane, is not adequately tested. In England it has been found necessary to devise an apparatus which records the time taken to perform the actual arm and leg movements made in flying—as, for example, the time taken in response to a visual stimulus to bring, by the appropriate movements of the control stick and rudder, a stationary aeroplane out of what in flight would be a "spin." In this way a test is made of the time of response to both exteroceptive and proprioceptive stimuli, and an estimate formed both of quickness of perception and delicacy of the coördinated movements of flying. The apparatus was evolved by Flight-Lieutenant G. H. Reid, D.F.C., from his original control indicator designed for the purpose of night and fog flying, which is being described elsewhere at this Conference. A report upon the use of this apparatus for testing flying aptitude has already been published in the Proceedings of the Royal Society of Medicine, vol. xvii., No. 12 (Reid and Burton).

The method of investigation is as follows:—

The subject is seated in the machine and the mechanism explained to him. A preliminary series of trial reactions is given, and, when the idea of the test is grasped, observations are made as follows:—

1. Time taken for successive hand movements from right or left to central position.

2. Time taken for leg movements on the rudder to central position from extreme right or left positions.

3. Time taken for combined movements of hand and feet simultaneously—usually from stick back and full over

* Being a paper read to the International Congress of Aerial Navigation at Brussels on Oct. 7th.

to left side with rudder full over to the right side—a position corresponding to that obtaining in the spiral manœuvre known as a "spin." In this case the time is taken until both controls are exactly centralised.

The effects of distraction may be observed by sounding a Klaxon horn unexpectedly during a series of observations. The effect is noted, not only upon the actual time of that response, which may be increased, but particularly upon the succeeding responses. A marked increase in reaction time persisting over several responses after the noise suggests some instability of nervous control. According to the individual the time taken for the centralisation of the rudder control is from 0·5 to 2 seconds, that of the stick from 1·5 to 5 seconds, due to the greater sensitivity of the setting of the stick control in the apparatus; that of the combined manœuvre (hand and feet) from 2 to 10 seconds.

These observations bring out the following points:—

1. Comparison of the time curves of hand and feet taken separately.
2. The comparison of the curve of simultaneously combined hand and foot movement to those of each taken separately.
3. The actual speed of reactions of each type as shown by the ordinates in the graph.

With this apparatus it has been found that:—

1. The first-class pilot gives a consistent record with an average time about two to three seconds, varying according to the type of machine and number of hours flown.
2. Those found unsuitable for instruction give curves of a multi-peaked nature, showing markedly erratic responses with, generally speaking, a big average time, five to six seconds.
3. The subject suitable for training, although giving a longer average time—four to five seconds—displays consistency of performance, although markedly erratic responses of long average duration probably indicate an inaptitude for the coördinated movements of flying.

It is not suggested that this apparatus shall be used on one occasion only, as, for example, at the entrance medical examination. It should preferably be employed during instruction in flying, when periodic tests will afford indication as to the rate of progress and of likelihood of acquisition of flying skill. It seems probable also that the apparatus may prove of service as a means of training pupils to acquire on the ground those particular coördinations necessary for control of the aeroplane in the air. Possibly also the apparatus may afford indication of the particular type of machine for which a pilot is especially suitable—fastness of time combined with stability indicating, for example, an aptitude for scout machines.

Physical Endurance.

But for flying efficiency it is not enough (as was shown in the war) to be endowed with a mechanical and mental aptitude; it is necessary also to be possessed of physical endurance, particularly when flying at high altitudes. It is not proposed to consider in detail here the effects of high altitude flying, beyond pointing out the fact that in such flying all the devices which conduce to efficient respiration and circulation are brought into play. It is on this account that (in the selection and periodic examination of the pilot) particular emphasis is laid upon the stability of the nervous control of respiration and circulation as well as upon general nervous stability. Generally speaking, an adequate opinion of such stability can be formed by the employment of simple tests, but in cases of doubt special measures can be undertaken, as, for example, observations to test the effect of altitude during rebreathing or during rarefaction chamber experiments. Briefly, the signs of such stability may be synopsised as follows:—

(*a*) Steady regular sitting pulse (60–72) rising in rate on standing up by not more than 24 beats per minute and subsiding in a short time to the normal sitting-rate in the very fit, or from 6–12 per minute, or about that rate, in the averagely fit. After exercise (standing on a chair five times 15 seconds) the pulse will increase from the steady standing-rate by not more than 24 beats per minute and will return to the normal standing-rate prior to the exercise in under 30 seconds. Conversely, lack of stability of control and efficiency is denoted by (1) quick pulse (irregular or otherwise); (2) undue immediate increase in rate in standing from sitting; (3) markedly increased standing-rate; (4) undue increase after exercise; and (5) delayed rate of return to normal standing-rate.

(*b*) A systolic pressure of about 120 mm. Hg to 130 mm. Hg with a diastolic pressure of about 75 mm. Hg to 80 mm. Hg, the pulse pressure in the fit being about 40 mm. Hg, and in the averagely fit not more than 50 mm. Hg. Conversely, lack of stability of control and efficiency is characterised by: (1) unduly raised systolic pressure (after all efforts to abolish temporary nervousness have failed); (2) diastolic pressure (*a*) about 95 mm. Hg (suggestive of nervous instability or excessive consumption of alcohol), (*b*) below 70 mm. Hg (indicative of possible predisposition to fainting); and (3) pulse pressures of more than 50 mm. Hg associated with the above conditions.

(*c*) Inability to hold the breath after full inspiration and respiration for about 69 seconds. Below 45 seconds is held to indicate an instability of the respiratory centre and lack of respiratory efficiency which may or may not be associated with disease.

(*d*) Inability to maintain a relatively steady pulse-rate while supporting by blowing a column of mercury with the breath held.

The technique of this test is as follows:—

With the nose clipped, the subject is asked to empty the lungs completely, inhale fully, blow the mercury to the height of 40 mm., and maintain it there without breathing as long as possible, the pulse being counted in periods of five seconds during the performance of the test. The average time in a large number of cases is between 50 and 60 seconds. A time less than 40 seconds is very unsatisfactory. In a good subject the pulse-rate may remain practically unaffected or may rise gradually in rate from 72–96, according to the time the breath is held. The pulse may rise almost at once from 72–84 or 96, and be sustained there. A large rise in rate—e.g., from 72–132 or 144—is unsatisfactory, and is held to be indicative of abdominal venous pooling. In cases of marked physical inefficiency a characteristic response is for the pulse to jump up to a very quick rate—e.g., 132–144—during the second or third period of 5 seconds, and then to fall away in rate to normal or even below normal. Such cardio-motor instability is an adverse factor in aerial work, and is an indication for rest. The test to be recorded thus:—

First, the number of seconds during which the mercury column is sustained, then the normal sitting-rate per five seconds taken before beginning the test, and then the number of pulsations in each five-second period, the time taken to blow the mercury to 40 mm. being ignored. The normal sitting-rate should be separated by a stroke from the first figure of the pulse response during the test—e.g., 50 seconds 6/6, 6, 7, 7, 7, 8, 9, 8, 8, 8, 8.

Blood Pressure.

Observations of the blood pressure during the test confirm the fact that this test elucidates also the stability of control of the blood pressures as well as of the pulse-rate. When performed to an average degree of discomfort there is in the fit subject over a period of 50–60 seconds a rise in the arterial pressure of about 30–40 mm. Hg—e.g., 120 mm. Hg–160 mm. Hg. In the less fit the pressures with attendant pulse acceleration rise more quickly and to a greater height—e.g., 130 to 180 mm. or 190 mm. Hg—generally speaking, 50–60 mm. in about 45–50 seconds. In the unstable the rise is even more marked, and may be as great as 80–100 mm. Hg in a space of 30 seconds—e.g., 160–240 mm. Hg. It is noteworthy that the greater part of such rises in pressure takes place in the first 15 to 20 seconds. This is interpreted as affording information in respect of abdominal pooling. The abdominal effort necessary to sustain the column of mercury increases the intra-abdominal pressure. In subjects with a tendency to abdominal pooling this pressure drives the blood onwards to the right heart, causing thereby an increase of heart-rate, together with an early marked rise in arterial pressure. In subjects where this pooling is unduly

great the systolic pressure becomes so increased that, following the acceleration of the heart due to an increased supply of blood to the right side of the heart, there supervenes reflexly through the action of the vagus a slowing of the heart-rate mainly owing to the stimulation of the depressor nerve endings in the aortic arch.

I think it may be safely stated that physical efficiency for flying duties is associated with stability of the centres controlling the respiration and circulation. A falling away of such stability is one of the earliest—perhaps the earliest—sign of deviation from true physical fitness. It is, therefore, a sign of the greatest possible value. It is found alike in those who are out of condition or stale; frequently also in those suffering from mild infections such as a common cold. It is particularly marked in cases of debility following disease, especially in cases of "nervous exhaustion." In many cases of psycho-neurosis the stability or otherwise of the lower control centres forms a valuable guide as to the form of treatment best employed for the condition. It has been found that in many cases of psycho-neurosis due to flying stress the primary cause of failure has lain with the lower rather than with the higher centres. In such cases timely rest and exercise at an early stage is all that is required to restore full physical efficiency. Early recognition of the condition forms the essence of successful preventive treatment, since at a later stage prolonged psychotherapy may become necessary. The stability of control of the circulation may also be used as a criterion in subjects who are deemed likely (*a*) to suffer from vertigo in the air due to uneven movement in the air, especially in aerial acrobatics; (*b*) to exhibit a tendency to fainting as altitude increases; (*c*) to be unduly anxious when called upon to perform aerial acrobatics.

In this connexion the following test has been devised:—

The subject is seated in the rotating chair and the nature of the test explained to him. It is pointed out that when a machine is spinning it is relatively out of control. To regain control, it is necessary that the human subject be in a condition to perform certain movements—centralise the controls; if, however, the human subject is out of control, then such movements will not be able to be performed accurately and the machine is likely to continue spinning or to come out of its spin and to go into another in the reverse direction. He will therefore now, while sitting as in a machine, with eyes open and head in best possible position—i.e., looking inside the knee further from the direction of spin—be subjected to a relatively fast spin, 10 times in 20 seconds.

The pulse-rate is noted in five-second periods and arterial pressures are now taken. Immediately after the spin these are again observed and the effects noted. More recently, also, the effect upon the ocular muscle balance has been observed.

In a large number of control tests upon good pilots it has been found that rotation has but little effect, the pulse-rate and blood pressures being only transitorily raised. The following afford three examples of many:—

1. Subject, I. H.; aged $24^{11}/_{12}$. Flying: 1200 hours—all types. General physical condition good. Pulse: sitting, 72; standing, 78–72; exercise, 84; return to normal, 15 seconds. 40 mm. Hg test: 78 seconds = 6/6, 6, 6, 6, 6, 6, 6, 7, 6, 6, 6, 6, 6, 6, 6, 6. On rotation chair—before: pulse, 6, 5, 6, 5; pressures: S., 124; D., 82. On rotation chair—after: pulse, 6, 7, 6, 5, 5, 5; pressures: S., 126; D., 84.

2. Subject, H. N. C. R.; aged $24^{8}/_{12}$. Flying: 1500 hours—scouts and day-bombing machines. General physical condition good. Pulse: sitting, 72; standing, 96–84; exercise, 108; return to normal, 15 seconds. 40 mm. Hg test: 65 seconds = 6/7, 8, 8, 7, 8, 8, 7, 7, 7, 7, 7, 7, 7. On rotation chair—before: pulse, 6; pressures: S., 126; D., 82. On rotation chair—after: pulse, 8, 7, 7, 7, 7, 6; pressures: S., 134; D., 86.

3. Subject, C. T. O.; aged $26^{7}/_{12}$. Flying: 1350 hours—all types. General physical condition good. Pulse: sitting, 72; standing, 84–72; exercise, 96; return to normal, 15 seconds. 40 mm. Hg test: 60 seconds = 6/5, 6, 7, 6, 7, 7, 8, 7, 7, 7, 6, 7. On rotation chair—before: pulse, 6; pressures: S., 122; D., 78. On rotation chair—after: pulse, 6, 6, 6, 6, 6, 6; pressures: S., 124; D., 80.

In contrast may be given the following cases:—

Liability to Vertigo.

1. Subject, R. F.; aged 21. Whenever in air (five times) suffered from nausea, retching, giddiness—especially on descending. On rotation chair—before: pulse, 6; pressures: S., 126; D., 88. On rotation chair—after: pulse, 9, 9, 8, 7, 7, 6; pressures: S., 158; D., 102. Nystagmus time normal.

2. Subject, K. E. S.; aged $24^{10}/_{12}$. Official report: On each occasion that I have taken this officer in the air for the purpose of dual instruction, after about 15 minutes he has collapsed through sickness. Examination 20/6/23. On rotation chair—before: pulse, varying 6–8; pressures: S., 128; D., 82. On rotation chair—after: pulse, 11, 12, 11, 12; pressures: S., 172; D., 98; pulse, 11, 12, not back below 10 in one minute; pressures: S., 170; D., 96. (Two separate observations.) Nystagmus time normal. Ocular muscle balance greatly disturbed.

3. Subject, M. G. R., candidate for piloting duties. History: Train sickness till 6 years of age—does not like swings, &c. General examination: pulse 5½; pressures: S., 134; D., 84. On rotation chair—before: pulse 5½; pressures: S., 156; D., 86. On rotation chair—after: pulse, 10, 9, 9, 7, 7, 6; pressures: S., 182; D., 110. Note marked effects of rotation in addition to anticipatory anxiety rise.

Cases Showing Liability to Fainting.

1. Subject, W. S.; aged $24^{5}/_{12}$. Found permanently unfit flying—1918. On rotation chair—before: pulse, 8; pressures: S., 148; D., 96. On rotation chair—after: pulse, 9, 9, 9, 8, 8, 8; pressures: S., 156; D., 78. Note marked fall of diastolic pressure. This case also shows anxiety, Class III., since pressures taken when not on chair were S., 128, D., 78—which shows the definite anticipatory anxiety rise of pressures.

2. Subject, H. G. History, 1918: After flying 36 hours overseas crashed after a flight of two hours at 19,000 feet—flying full speed into the ground. Has no memory of crash—has not flown since. Examination 18/7/23. On rotation chair—before: pulse, 6; pressures: S., 142; D., 78. On rotation chair—after: pulse, 5, 5, 5, 6, 6, 6; pressures: (1) S., 142; D., 58; (2) S., 140; D., 60. (Two observations.) Note marked fall of diastolic pressure.

3. Subject, M. G., ex-naval officer; candidate for aviation. History: Never liked swings—mother highly strung. Ordinary medical examination: pulse, 72; pressures: S., 134; D., 90. On rotation chair—before: pulse, 6; pressures: S., 146; D., 100. On rotation chair—after: pulse, 6/—87 (imperceptible); pressures: S., 168; D., 70; (after some delay). Candidate fainted for 20 seconds, becoming pale; muscles quite limp. After test, acknowledged that once he had to be carried out unconscious from a swinging tub in Copenhagen.

Anxiety Cases.

1. Subject, R. M. J. Has been suffering from indigestion past two to three months—states feels giddy and faint on ground and in air for last month; suffered from shell-shock during war. At ordinary examination: pulse 72 per minute; pressures: S., 118; D., 76. On rotation chair—before: pulse, 72; pressures: S., 146; D., 74. On rotation chair—after: pulse, 7, 6, 6, 6, 6, 6; pressures: S., 140; D., 76. Note anticipatory anxiety rise.

2. Subject, D. V. A. M.; aged 27. Found unfit as pilot—for nervous symptoms, &c., 1918. General medical examination = unsatisfactory nervous stability and control. Pulse: sitting, 96; standing, 120–108; exercise, 132; return to normal, 25 seconds. Pressures: S., 140; D., 86. 40 mm. Hg test: 40 seconds = 8/9, 10, 11, 10, 11, 10, 10, 10. On rotation chair—before: pulse, 10; pressures: S., 154; D., 80. On rotation chair—after: pulse, 11, 12, 11, 11, 11, 10; pressures: S., 162; D., 72. Note anticipatory anxiety rise in rate of pulse with rise of systolic pressure and fall of diastolic pressure—a result further accentuated in this case by rotation.

3. Subject, D. E. W.; aged $30^{7}/_{12}$. Examined for fitness for piloting duties—has felt uneasy while flying as passenger. "Shell-shock" during Great War. General examination unsatisfactory. Pulse: sitting, 72; standing, 108–96; exercise, 114; return to normal, 45 seconds. Pressures: S., 156; D., 102. On rotation chair—before: pulse, 6; pressures: S., 182; D., 110. On rotation chair—after: pulse, 7, 7, 7, 7, 6, 7; pressures: S., 182; D., 110. Note marked anticipatory rise of arterial pressures, unaffected by rotation.

The main results may be summarised as follows:—

(1) In fit pilots, particularly those accomplished in aerial acrobatics, rotation produces but little effect upon the pulse-rate or arterial pressures.

(2) In cases subject to vertigo, nausea, or vomiting, rotation produces a marked rise in pulse-rate and in systolic and diastolic pressures.

(3) In subjects liable to fainting, rotation produces a characteristic fall in the diastolic pressure.

(4) In highly strung subjects, liable to develop an anxiety neurosis, there is a marked anticipatory rise of pulse-rate and systolic blood pressure prior to rotation, which may or may not be further affected by rotation.

(5) In practice it is found that subjects may tend to exhibit a combination of abnormal responses, but the main criterion is the fact that the satisfactory pilot is relatively stable in his responses.

From the above results, therefore, it will be seen that this test appears to afford valuable information in respect of flying efficiency and can be profitably employed when from the history or general medical examination any doubt is entertained in respect of the likelihood of such efficiency. In regard to the effects of rotation upon ocular muscle balance, these will be dealt with at a later date, in conjunction with Wing-Commander Cecil Clements. It can, however, be stated that results thus far indicate that in subjects who are not incommoded by aerial acrobatics the ocular muscle balance is not affected, whereas in subjects who suffer from giddiness and nausea this is markedly affected. During the general medical examination note is also made of any signs of lack of stable nervous control of circulation, respiration or any other system, since it is considered that stable nervous control in respect of all the bodily processes plays a great part in conferring bodily endurance. Thus undue sweating or signs of vaso-motor disturbance—e.g., flushing—are equally as much as tachycardia signs of instability. So also in certain cases is a heightened body temperature—e.g., 99·2°–99·6° F.—the only ascertainable cause for which is apparently suppressed nervous excitement.

In respect of the alimentary system, any history of alimentary disturbance in the absence of disease must lead to careful investigation owing to the frequency of such abnormal conditions being expressions of disorders of the vegetative nervous system.

Psychic Control.

The degree of higher psychic control over the primitive emotional reactions is assessed mainly by the past history of the subject, and by his demeanour and behaviour under examination. A history of undue emotivity as a child, or of any previous nervous illness, shell-shock or breakdown, is regarded as evidence of unstable higher control with a consequent tendency to break down under the strain of flying duties. The presence of stammer, tics, restlessness under examination is considered to be indicative of such a state. Nail-biting is corroborative of the same. In the clinical examination particular attention must be directed to the state of the deep reflexes and presence or absence of tremors. With regard to the knee-jerk, a brisk response alone is not necessarily considered evidence of instability. Where, however, apart from any question of organic nerve lesion, the limb can be thrown into a state of tonicity by rapid repeated stimuli, a functional inefficiency in respect of higher control is indicated. In some cases the response to the tap of the patellar tendon is a general muscular contraction of more or less the whole body, a valuable sign of defect of the highest centre control, but no indication of the condition of the deep reflexes. Such a response is usually associated with a state of anxiety, conscious or subconscious. Tremor of the fingers is evidence of some disordered functional state, and is often an accompaniment of a general state of heightened nervous excitability. Tremors of the eyelids alone are usually indicative rather of a highly strung disposition or of the result of legitimate stress—e.g., overwork or strain of occupation; tremor of the fingers and hand rather of excessive indulgence in alcohol and tobacco.

Tests for the estimation of the power of coördination of opposing groups of muscles are of considerable value in elucidating the state of higher nervous control. In the "self-balancing test" the subject stands with heels and toes touching, the arms being held at the sides. One knee is then flexed to a right angle and the legs held apart slightly. When he has obtained his balance standing on one leg, he closes the eyes and endeavours to maintain the position steadily for 15 seconds. The degree of coördination is assessed by the amount of movement necessary to maintain balance. This test demonstrates the degree of higher control rather than the condition of muscle sense or vestibular stability. Again the subject may be required to raise to shoulder level from a table a board on which stands a small relatively unstable metal rod (of fixed dimensions) and to replace it upon the table without upsetting the rod. The test should be equally well performed with either hand. Besides bringing out any existing tremor, this test demonstrates the state of muscular coördination. Both the above tests are performed with ease in subjects possessing good higher control and a satisfactory performance of the test has been found in efficient pilots. On the other hand, poor performance has been noted in association with states of exhaustion, flying stress, insomnia, and other neuropathic and psychopathic conditions in an early stage of development. In such conditions also will be found an associated lack of nervous control of the respiration and circulation, and, as already pointed out, in many cases it is the failure of such control which predisposes to the breakdown of the higher centres.

In the assessment of efficiency for flying duties, in the case of a candidate, care has to be taken to differentiate as far as possible between states producing temporary lack of nervous stability and control and those in which such lack is of a more permanent nature.

FÆCAL ENTEROLITH OF THE SMALL INTESTINE.

BY R. J. MORRIS, C.B.E., M.D. DURH., M.R.C.P. LOND.

FÆCAL enterolith of the small intestine is rare. It is the rarest cause of intestinal obstruction, only one case occurring in a 13 years' period at the London Hospital. The diagnosis is difficult, the train of symptoms often extending over a long period, so it is worth while to record the following case in the hope that it may help towards an early diagnosis.

Clinical Record.

Mrs. A. B., aged 68 years, came under my care in July, 1922. She complained of painful and frequent micturition, constipation, alternating with diarrhœa, and spasmodic pains in the abdomen which brought about nausea and vomiting. She gave the following history: Dysentery and fever in India prior to 1880, followed by chronic constipation; acute enteritis in 1894; floating kidney was diagnosed in 1896; operation for fixation of kidney in 1906; and operation for gall-stones in 1907. Many gall-stones were removed, complications followed, and a further operation was performed in 1908. She had partial obstruction of the bowels in 1916, relieved by enemata and other treatment.

Examination of the patient in July, 1922, revealed some irregular bulging on left side of the abdomen, some tenderness over the site of her operation scars, no rise of temperature. Urine was normal. After a short course of treatment she left Harrogate and returned to my care on June 22nd, 1923. She stated that she had had many attacks of spasmodic pain in the abdomen, constipation alternating with diarrhœa, and that for the last three weeks the pains had increased in frequency and intensity. She complained of painful and frequent micturition; urine showed a growth of *B. coli* on culture; pulse and temperature were normal. During the following days the spasmodic pains in the abdomen increased in intensity and peristalsis was visible on inspection. On June 28th she vomited several times, on June 29th intestinal obstruction appeared to be complete. A con-

sultation with a surgeon was arranged, when the conclusion arrived at was that the obstruction was due to malignant disease of the intestine, and operation was decided on. At the operation a hard mass was found lying free in the lower portion of the ileum and successfully removed. She made an uninterrupted recovery, and is now in good health and leading an active life.

In the moist state the enterolith was black and polished, due probably to peristaltic action, nodular on the surface, weighed 33·4 g., 5·5 cm. long, 3·8 cm. in diameter. Section showed no nucleus, texture was spongy, heterogeneous, some parts having a specific gravity greater and some less than 1.

A detailed examination by Prof. H. S. Raper, of the Department of Physiology and Biochemistry, Victoria University, Manchester, is as follows:—

"The enterolith, when air-dried, was somewhat larger than a walnut and was nodular on the outside. The outer surface was black and shiny. It was much lighter in weight than enteroliths, which are rich in mineral constituents. On section it appeared to be roughly homogeneous in texture, light brown in colour, non-crystalline, and not stratified. It contained 14·0 per cent. of moisture. A portion of the powdered calculus weighing 2 g. was extracted in a Soxhlet apparatus with acetone. The acetone-soluble portion was obtained by distilling off the acetone, and this was extracted several times with light petroleum. The petroleum-soluble substance (fat and cholesterin) was obtained by distilling off the petroleum and weighed 0·146 g. = 7·3 per cent. fat and cholesterin. The portion of the acetone extract, insoluble in petroleum, was very small in amount and consisted of a brown gummy substance.

The enterolith.

The residual substance of the enterolith after acetone extraction was now extracted continuously with hot alcohol for four hours. The alcohol extract weighed 0·12 g. and consisted of brownish resinous material from which nothing characteristic could be obtained. The main bulk of the enterolith was insoluble in organic solvents. The weight of the residue left after acetone and alcohol extraction weighed 1·47 g. and represented 73·5 per cent. of the original calculus. It gave protein reactions, a very faint starch reaction with iodine, and contained only a very small amount of ash. Under the microscope it resembled vegetable rather than animal material, and contained many dead bacteria. It was partly soluble in hot dilute sodium hydroxide and in cold concentrated sulphuric acid giving a deep-brown solution. Neither solution showed absorption bands when examined spectroscopically, and since only a minute trace of iron was present, the presence of remains of a blood-clot in the enterolith can be excluded.

To estimate the total protein present, total N was determined in a weighed portion of the acetone and alcohol extracted residue by Kjeldahl's method; 5·67 per cent. nitrogen (=34 per cent. protein) was found. From its appearance and properties it seemed likely that the rest of the extracted residue was mainly vegetable material. To test this, a small portion was treated with cold concentrated H_2SO_4 for two hours. The mixture was then diluted to make the acid 2 per cent. in strength and boiled under a reflux for six hours. The solution was filtered, neutralised exactly with baryta, and allowed to stand. The clear layer above the $BaSO_4$ was siphoned off and concentrated to 35 c.cm. under reduced pressure. The concentrated solution reduced Fehling's solution on boiling and gave a distinct orcinol reaction, indicating the presence of pentoses. It may be presumed, therefore, that the enterolith contained a considerable amount of vegetable matter.

As a result of this examination it appears that the enterolith was principally fæcal in nature, and that it did not originate as a gall-stone, a bile-acid concretion, or a blood-clot. The appearance did not suggest that it was an 'oatmeal stone' such as has been described by Hammarsten (quoted by Cammidge)."

The very careful examination sheds no light on the mode of formation of this enterolith.

Examination by X ray was omitted in this case; had a direct radiogram been taken, the enterolith would have been discovered, because examination by X rays of the section left after analysis cast a very definite shadow, almost as dense as that of bone, and would have shown up clearly in any radiogram taken of the pelvis. It would be desirable in all suspected cases to examine the abdomen and pelvis by X rays, but without the opaque meal, which would flow around the concretion and obliterate it on the radiogram.

A classification by Allbutt and Rolleston[2] includes concretions formed from amorphous fæcal matter. This appears to be the composition of this enterolith, the necessary cause of arrest being the dependent position of the lower end of the ileum, the chronic irritation of the intestine, due to enteritis, providing the colloid menstruum in which the formation took place. Tentative diagnoses of enteroliths have frequently been disproved at operation, but the possibility should be borne in mind. A positive diagnosis in this case would have prevented probably years of suffering and invalidism. A radiograph of an enterolith in situ has been described by Dr. J. Anderson, and this is the only instance I can find in the literature on this subject.

Dr. F. Cowan[16] says that rarely preoperative diagnosis is made, and that little attention has been given to the organic substances which enteroliths contain. Dr. Owen T. Williams[15] says concretions found in the intestine are not fully described, and are usually dismissed as "fæcal concretions," "fæcal accumulation," or "enterolith," often not of a simple nature but as manifestations of some abnormal condition of the intestinal secretion.

Dr. Coerr[5] mentions the fact that most of the enteroliths reported have been discovered at operation or post mortem. The rarity of such should be borne in mind and X rays employed; there are no classical signs and symptoms because of the varying size and position in the alimentary canal. Persistent constipation, digestive disturbances, nausea, vomiting, colicky pains, abdominal soreness, and sensitiveness are the usual complaints.

The concretion may act as a ball-valve causing intermittent obstruction, or becoming wedged may cause complete obstruction necessitating operation. Treves states that the most important symptoms indicative of the presence of an enterolith are persistent attacks of incomplete obstruction of the bowel. A new form of enterolith found in the jejunum in a case operated on for intestinal obstruction is described by Prof. Raper.[17] It is notable that two-thirds of the cases of enteroliths are found in the female.

References.

1. Adami: Principles of Pathology, i., 861.
2. Allbutt and Rolleston: System of Med., 1908, iii., 742.
3. Anderson: Brit. Med. Jour., 1913, i., 931.
4. Bedford: Ibid., 1902, ii., 1764.
5. Coerr: Jour. Amer. Med. Assn., 1913, lxi., 25.
6. Cripps: Trans. Path. Soc., London, 1897, xlviii., 122.
7. Duckworth and Garrod: Med. Chir. Trans., 1901, lxxxiv., 389.
8. Eliot: Med. and Surg. Reports: Presby. Hospl., N.Y., 1902, v., 218.
9. Ferguson and Reuter: Med. Sentinel, 1903, ii., 499.
10. Forsyth: THE LANCET, 1904, i., 502.
11. Gant: Post-Graduate, 1901, xvi., 335.
12. Grieg: THE LANCET, 1910, ii., 1613.
13. Hadden: Transactions of the Pathological Society, London, 1888, xxxix., 131.
14. Treves: Intestinal Obstruction, p. 194.
15. Williams: British Medical Journal, 1907, ii., 199; 1912, ii., 1281.
16. Cowan, J. T.: The Surg. Clinics of N. America, 1922, ii.
17. Raper, H.S.: Biochem. Jour., 1921, xv., No. 1.

Harrogate.

HOSPITAL EXTENSION AT STOCKTON-ON-TEES.—At a public meeting on Sept. 29th, in response to an appeal for money for the extension of the local hospital, subscriptions amounting to £14,480 were announced, including £10,000 from Sir John Ropner and £1000 each from Sir Frank Brown, Sir John Harrison, and Mr. T. Mellanby. The extension will cost £43,000, of which £31,000 is in hand, consisting of gifts of £10,000 each, with interest, from the late Sir Robert Ropner, Mr. C. W. Littleby, and Mr. Leonard Ropner. This leaves £12,000 to be raised.

ISCHÆMIA CORDIS INTERMITTENS.

WITH NOTES ON THE EXAMINATION AND PROGNOSIS OF DISEASES OF THE HEART AND VESSELS.

BY DR. L. BISCHOFF,
LUGANO, SWITZERLAND.

. . . . and "in difference there is life."—
The late Sir T. CLIFFORD ALLBUTT *to the author.*

IN the following paper I propose to isolate and describe a group of anginoid phenomena, which I would designate as *Ischæmia cordis intermittens* and which I have closely studied. It presents the following peculiarities:—

It affects patients of about from 30 to 70 years, mostly males, who often, after more or less brisk walking (generally in the open) or climbing, or, in fact, soon after any sort of exercise, feel a disagreeable pain behind the sternum, which passes into a feeling of spasmodic contraction and oppressive sensations of anxiety, culminating in such a feeling of annihilation, that the patients are obliged to stop; and if they must perforce move on can only do so under extreme necessity. It may, indeed, lead to complete loss of consciousness. There is no dyspnœa with this affection. A rest of a few seconds, or at most of minutes, is sufficient to enable the patient to continue his walk in perfect comfort. Soon, however, after the resumption of exercise the pain returns, and rest becomes once more necessary. The history of all patients, with slight variations, reveals the same, almost stereotyped, phenomena.

I will now proceed to mention a few such cases, describing the first a little more in detail.

CASE 1.—Railway official, aged 56, sent to me for expert opinion. Nothing special in his history. Three years ago, during an easy walk in hilly country, the patient was suddenly obliged to stop because of an unexpected pain in the chest. After about five minutes' rest he was able to go on. From this time until October, 1922, when a similar sternal pain appeared, lasting somewhat longer, there had been no attack. Twelve days after, as the patient left the house for the first time after a transient abdominal affection, after 50 or 60 steps, the pain returned, obliging him to stop. After two or three minutes he could continue, but again only for 50 or 60 steps, and this recurred five or six times until the end of the walk. Since then these attacks have recurred regularly when walking in the open, but recently the distances walked without pain have become longer (100 to 150 metres). On longer walks the attacks, which in the beginning recurred at short intervals, gradually became rarer, and the distances walked, without pain, longer; but the pain itself, when felt, is of the same intensity, always obliging the patient to stop. Shortly after food—viz., midday dinner or any other full meal—the attacks are stronger and more frequent. The same occurs when climbing stairs. Apart from these attacks the patient is well. He is a slender, rather undernourished man. Apex-beat felt in the fifth space in the mammillary line, extending down towards the median line and well visible in the epigastrium. This beat is slowly heaving. The heart borders are slightly dilated, both right and left. In the region of the manubrium sterni there is an unusual dullness towards the left. The heart sounds, which are clear and regular, are most easily audible in the epigastrium; they are heard with difficulty at the bases of the heart. Blood pressure 180–190 max. (variable). Hæmoglobin 70 per cent. Stained blood film shows nothing of note. Traces of albumin in the urine. A screen examination showed a dilatation of the aorta, pulsating synchronously with the systole. In the first oblique diameter there was no filling of the posterior mediastinum; dilatation of the right auricle; slightly dilated left ventricle, which is strongly rounded. In view of the dilatation of the aorta a Wassermann test was made but gave a negative result.[1]

After four months the condition of the patient was objectively and subjectively identical. After several genuflexions the pulse was accelerated to 110 per minute; infrequent suppression (arrhythmia) of a few pulse-waves. Blood pressure: systolic 175, diastolic 110. No pains. Observed in the open (public park), at rest, pulse 64–70 per minute, regular, equable; blood pressure[2] (conf. Korotkoff) 170–100; radialis the same on both sides. After about 100 paces the patient said he felt the pain behind the sternum, radiating to the arms. Continuing the walk he asked to stop after ten paces. Facial expression somewhat anxious. No dyspnœa; no apocamnosis. Pulse 120 to 124, of alternating form, large and small beats of the oscillometer at (Korotkoff) 190–150; strongly alternating murmur pulse and tone pulse with equal pressure of the cuff. Cessation of the pulse (8–10). After one minute's rest improvement of subjective condition. After two minutes the patient continued his walk without difficulty. Pulse 70, regular, equable; blood pressure 170 (175) –100.

CASE 2.—Physician, aged 62. Non-smoker, moderate consumer of alcoholics, good eater, no syphilitic history. Came on account of the above described complaints which had first appeared three years ago. The attacks came on in the open, and chiefly in cold weather. When walking is not at once stopped the pain extends to the left side of the chest, to the left and then to the right arm, and the feeling of oppression on the chest increases and vertigo appears.

State of nutrition good, hypertrophy of the heart, slight dilatation on the left, a ringing second sound of the aorta; no murmurs. Pulse regular, well, and equally perceptible on both sides (70 per minute). Blood pressure 250–110 (Pachon); no albumin in urine (repeated examinations); no glucose, no pathological sediment. During an experimental attack the pulse was regular, 100 per minute (same right and left). Blood pressure 260–200. Heart sounds dicrotic.

CASE 3.—Painter, sent for report, aged 57, complains of spasmodic painful sensation under the lower sternum and in the epigastric region, which occurs after walking in the open air and obliges him to stop. No dyspnœa. The sensation is accompanied by a peculiar feeling of tiredness in the arms. A spasmodic pain appears also during efforts of defæcation. The symptoms date from two and a half to three years back.

Patient is of plethoric complexion, high diaphragm, emphysematic thorax; apex of heart in the mammillary line. Auscultation difficult (owing to thickness of panniculus adiposus and extension of lungs): m.l. (median left), 12·5–13; m.r. (median right), 4·5 (orthodiagraphy). Oblique position of heart. Pulse regular, 80–90; blood pressure 190–100 (Pachon). After exercise the minimum rises disproportionately (140). Albumin in the urine; low specific gravity (1004). Hæmoglobin 78 per cent., red corpuscles 4,200,000. Stained blood film nothing of note. Wassermann test negative. The dorsalis pedis and tibialis postica examined on the screen show nothing abnormal. The condition of blood makes chronic lead poisoning improbable.[3]

CASE 4.—Female, aged 51, syphilis acquired 20 years ago in South America. For a year past, on walking quickly, she feels compression and pain in the chest. If she does not stop giddiness supervenes. One day, to avoid being run over by an automobile, the patient had to move on when giddiness had already begun; she fainted and fell, narrowly escaping the car. She was taken home by others. No consumer of either tobacco or alcoholics.

First sound both at base and apex, resonant, with a high timbre as of church bells; second aortic sound slightly accentuated. Percussion showed no displacement of borders. The near X ray image in the second oblique diameter (position 45) shows a sharply defined bulging and strong pulsation against the aorta "window." Slightly turning the patient to and fro facilitates topography. Pulse 84; blood pressure 150–100. Wassermann negative. No albumin in urine; no glucose. Patient feels oppressed after a short walk in the open air and shows a slowly progressing bradycardia (with regular pulse), and soon giddiness ensues. The walk is not continued.

CASE 5.—Civil engineer, aged 53. Family history: The father died of apoplexy. The patient is a strong smoker, partakes of alcoholics in moderation, denies syphilis. On walking in the open he complains of the above-mentioned distress. When walking is continued he loses consciousness and falls. Clonic convulsions of the limbs with foam at the mouth were observed by casual witnesses; pulse fluttering. After about one hour the pulse is still very rapid. There was no alteration of the heart, either by percussion, auscultation, or orthodiagram. Pulse 74 per minute. In the morning with empty stomach, blood pressure 120 max.; in the afternoon 160 max., 90 min. Wassermann negative. No albumin in urine, no glucose, no urobilinogen, nothing in sediment. Reflexes slightly increased.

CASE 6.—Business man, aged 28, smoker, no syphilis. A month ago, during betrothal, the patient, after walking in the open air, gets the typical pains; this until the breaking off of the engagement, three days ago. Nothing particular about the heart. Blood pressures 170–95, pulse 80. An experimental walk in the open air has no results. No attack to be provoked even by running.

[1] From the report to the chief physician of the Swiss railways, Nov. 27th, 1922.

[2] Brace, manometer, and sphygmometric oscillometer were left in during the whole observation.

[3] From the report to Dr. P. in B.

CASE 7.—I regret being able to report on this case only from memory, as I examined it only as a visitor during consulting hours at the university clinic while I was assistant of Prof. Michaud. The patient was a Russian, aged about 30, rather thin. He smoked much and denied syphilis. Nothing wrong with the heart detected by percussion, auscultation, or fluoroscopy. Pulse normal (?). I witnessed an attack, for after walking about 50 metres rather briskly we were obliged to stop suddenly as the patient felt a strong pain in the manubrium sterni. He became very pale. No dyspnœa. The pulse in the radial was very perceptible. After a stoppage of a few minutes the pallor soon disappeared and the patient could provoke further fits by repeated exertion. The attacks, however, did not occur every day. The patient left for Russia before a more thorough examination could be made.

The intermittent attack after relatively hard exercise, especially in the open air, is common to all these cases. In none of them did the attack occur during rest (in bed), as may happen in true angina pectoris. Dyspnœa was never observed. In the first cases, with general or more local alteration of the vessels, I suppose there is a coronary affection in which the heart is unable to meet greater exertions, and insufficient adaptability (dilatability) of the altered vessels during exercise.

Case 2 might be included in the Bittorf's type of dyspragia cordis, dependent on the advanced age of the patients, with arterio-sclerosis of the coronaries. In Case 4 the patient shows a typical luetic affection of the aorta ascendens. In Cases 5 to 7 the cause of the attacks is probably to be found in an angiospastic neurosis (vasomotor) and an increased vasomotor irritability in the coronary vessels after exercise, something like the benign form of intermittent lameness of the lower extremities through nervous and angiopathic diathesis (Tobias), or through angiospastic diathesis (van Ordt). Perhaps with many patients there is a congenital narrowness of the vessels which Mendel especially emphasises in cases of intermittent claudication. Probably also nicotine comes in here as an exogenous factor, as it often does in intermittent claudication (Erb). I should include in this complex of symptoms some cases published by Mendel[4] of intermittent lameness of the aorta and its branches. In Case 4 the attack would be caused by poor supply of heart muscle through insufficient flow of blood in the coronary arteries (ischæmia) owing to progressively retarded sequence of heart-beats.

We know that epileptic fits (such as in Case 5) occur also in heart-block instead of (or after) the usual fainting fit. The observed tachycardia (Case 5) excludes connexion between these fits and the Stokes-Adams complex. Though observations similar to the above are rightly named "lameness" of the heart, angina pectoris and these special forms are not usually distinguished, so that angina pectoris becomes synonymous with intermittent "lameness" of the heart. Potain already called true angina pectoris intermittent lameness of the heart. Fits of insufficiency accompanied by dyspnœa do not, of course, belong to this present argument, though naturally in case of ischæmia cordis intermittens, with organically altered vessels, the neighbouring aorta ascendens may also be affected (insufficiency and stenosis of the aorta). In the same way other defects of the heart (such as mitral stenosis, &c.) may accompany it (see Gallaverdin).

We thus have to distinguish between angina pectoris vera and this form of disease. Most fits of angina pectoris occur at night or during rest; the above-described features during exercise. Angina pectoris vera has a much more unfavourable prognosis. By taking care of one's self (rest) the fits of ischæmia cordis intermittens do not occur at all—i.e., they do not come when we do not want them to. Angina pectoris vera comes when it will, and may kill in that case. In our cases, as in the usual angina, further prognosis will depend on the ætiology of the ischæmia—i.e., when there are alterations of the vessels, on the extent of such alterations, on the state of the aorta, of the heart muscle and on its reserve power. One can easily see that when there is rigidity and slow response of the vessels, and the heart muscle is then suddenly overtaxed to the point of failure, the prognosis will be a more serious one. A heart with good reserve power will resist better and longer than one without this advantage (lues).[5]

Combinations of angina pectoris with ischæmia cordis intermittens naturally occur, but still only a sharp distinction between limited complexus of symptoms can give us a clear insight into the different forms of disease; hence greater assurance regarding pathogenesis and special prognosis and therapy. The chief requirement is—besides the history which shows the way, and after a thorough clinical examination—to examine the patient during a fit in the open air, that is to walk and climb with him, always closely observing him.

I have named this complex of symptoms *ischæmia cordis intermittens*, as its origin is connected with an insufficient supply of blood to the heart muscle, whether this be due to a pure spasm, insufficient lability of the sclerotic vessels, or other factors, intermittently after exercises like an intermittent lameness of the lower limbs. The qualification, angiosclerotica, angioneurotica might still more define this affection. The statistics, of course, differ according to selection of material in relation to other diseases (intellectual and bodily workers). We know, for instance, that angina pectoris is more frequent among professional men (doctors, lawyers, clergymen, politicians, financiers) than among labourers and peasants, and hence its relative rarity in the hospitals. The fact is also to be noted that while "organic affections" of the heart predominate greatly as causes of death in the black race ($\frac{1}{4}$ to 2 times according to Registration Area U.S., 1914–17) angina pectoris does so (2 to 1) in the white race.

EXAMINATION AND PROGNOSIS OF DISEASES OF THE HEART AND VESSELS.

It is very advisable to carry out *auscultation* in a cabinet which shuts out exterior sounds. I much doubt whether it will be possible to register successfully the timbre by instruments. For this the human ear remains the best receiver. The rubber tubes of the stethoscope lower the character of the sounds perceived in proportion to their flexibility and their length; short tubes are, therefore, advisable. It had seemed to me in several cases that the species of the tonality, the timbre (not the intensity) before and after exercise, might inform us as to the efficiency of the heart and vessels, but I can give no definite results. I have never heard a double first sound (during quiet breathing in the entire phase) in cases of ischæmia cordis intermittens, while it has been repeatedly observed in angina pectoris (Huchard), either as "angina de décubitus, produite par le collapsus du ventricule gauche," as Vaquez calls it, or otherwise. I cannot in practice follow the division of Leclerq in classifying angina as A, B, C = cardio-sclereux, aortique, atherome cardio-aortique.

Though the assertion of Mackenzie that *respiratory arrhythmia* can indicate a sound heart cannot be sustained, still it can be accepted as a sign of good compensation. And I would add that the stronger the arrhythmia the better the prognosis (with the same patient). The following example may serve as illustration:—

Mrs. M. C. L., affection of the myocardium with angina pectoris vera, breathing arrhythmia was always present during the compensation of the heart. A few days before the fit the pulse was perfectly rhythmical and strong. During the fit there was tachycardia, but in convalescence the breathing arrhythmia was promptly re-established. Here the arrhythmia was a favourable indication, regular rhythm a bad one. (For causes see Brown-Séquard, Einbrodt, Burdon Sanderson, Hering, Fredericq, Spalitta.)

[4] Zentralblatt f. d. ges. Neurologie u. Psychiatrie, xxvii., Nos. 2–3.

[5] In a list of 40 cases of angina pectoris, mostly Parisians, by Martinet, one half had proved luetic affection, which made the prognosis much worse.

In general, and in accordance with what I have set forth, we must suppose that when the heart responds less vigorously to the provocations which vary with the work performed (i.e., if the totality of blood thrown into the system of arteries per minute is invariable), its value as a pump is very probably impaired!

Blood pressure has been measured by the oscillatory method with Pachon's instrument. Though I prefer to use a double cuff (like Gallavardin) for measuring maxima, Pachon's simple cuff was found quite sufficient when measuring blood pressure in the open during trials. Already—as assistant—I had noticed that the blood pressures in the early mornings, with an empty stomach, were often considerably lower than when measured during the day. We know at present that a pressure that varies during the day is more favourable prognostically than a permanently even one, and I would say this is so even when the single peaks of the varying pressure curve reach much higher figures than the moderately high but flatter waves of the other. Only by comparison of pressures of different times of the day can we distinguish between the permanent and the diurnal temporary high pressures. Strictly speaking, the pressure should therefore be measured several times a day, but as this is often unadvisable, either because of an unfavourable psychic impression on the patient or for other reasons, I find two determinations sufficient, that of the early morning as the lower pressure closely approximating the pressure during sleep, and the second determination some time during the late afternoon. It is to be regretted that the observation of pressures during sleep is difficult to obtain. In the purely spastic forms of ischæmia cordis intermittens blood pressure was "variable." The patients with organic alterations showed a lowering of the systolic and at the same time a rise of the diastolic pressure, which, with a strong convergence of the two pressure-curves, gives a bad prognosis.

Radiologically (besides general fluoroscopy) I generally make use of *orthodiagraphy* and mark the pulsations and the excursions of contours. Teleradiograms were of secondary consideration. Special attention was given, firstly, to the aorta, and then to the configuration and range of contractions of the heart under different conditions; of the aorta more especially to the aorta ascendens. As to the aorta, I think that in general much unnecessary importance is given to the so-called "deepened shadow" in cases of sclerosis of aorta ascendens. Apart from the hardness of the tube, the distance of the screen, the stop, &c., which are all technical factors, the personal disposition of the observer at the time plays an important part in the judgment.

Generally, m.r. and m.l.=A.T. of the aorta were measured and its length in comparison to m.r. and m.l. of the heart, for the longer the transversal dimensions of the heart the larger may be those of the aorta without indicating a pathological state of the aorta (always considering the height of the diaphragm and the shape of the thorax, &c.). Hence, absolute single figures (dimensions of the aorta only) may be valueless.

By turning the patient slowly while standing around his vertical axis, one obtains views of the other (chiefly I. and II. oblique) diameters. This slow turning I often find of much assistance in identifying parts of the image. I only have been able to observe one patient fluoroscopically during a fit of ischæmia cordis intermittens. Such observation is rather difficult in itself. Orthodiagrams, in this case of i.c.i., before and during the fit, showed no alteration worth mentioning (f.i. dilatation), but undoubtedly the apparent pulsations and the well visible range of contractions were small. The supposition of a so-called "cramp of the heart"—i.e., of a tonic-spasmodic state of contraction—is completely excluded here. Valsalva's experiment (strong effort of expiration with closed glottis) showed scarcely any (unfavourable) change. Zehl's experiment (expiratory flattenings) did not plainly show any flattening. It is to be regretted that those two experiments are still but rarely made. Indeed, orthodiagraphy as a control is seldom made. While making orthodiagrams I have frequently endeavoured to draw the usual ventricle diastole, and vessel systole orthodiagram (during quiet breathing—as should be made in usual orthodiagraphy), the contours both of the ventricle systole and the aorta diastole. I tried to utilise the observations of varying amplitudes for *determining the functions of the heart vessels*—viz., orthodiagrams taken before and after exercise with indication of the corresponding systole-diastole amplitude. I was very pleased to see that Dietlen supports me in general on this test as a means of forming an opinion on the function of the heart. "By these means one will at least be able to decide in each case if a change in the volume of the heart-beats has occurred."

A complete cinematographic view would, of course, give a still better insight into this matter, but so far this has not successfully been done. Groedel's method, which consists in a combination of a series of radiograms with the corresponding electrocardiograms, might, perhaps, prove useful. But a continuous "film" would give us a far more objective and comprehensible view, with all details and hence with many differentiations (according to each single case). A slowed-down reproduction, such as commonly done in picture theatres for showing gymnastics, diving, &c., would permit an even closer study of details.

The strength and quality of the pulsations at the beginning of lues at the aorta as shown on such a film and compared with the latter observation, would reveal the cicatrisation, if any, which may have been produced by specific treatment (in the form of a reduced pulsation?).

I believe I am the first who has clinically examined in the open air cases of ischæmia cordis intermittens during purposely provoked fits,[6] and I trust I have indicated several new methods and directions for work to be followed in the diagnosis of heart affections, and especially also in their prognosis, which may prove of interest.

The late Sir T. Clifford Allbutt very kindly assisted in translating the technical words into English (1923/24).

New Inventions.

A CONVENIENT DISSECTOR.

IN the operation of transfusion of blood it is desirable that the veins, whether of donor or recipient, should be handled as delicately as possible, and finding that most of the instruments for this purpose were

unduly heavy, I have had constructed a combined dissector and aneurysm needle (see figure.). The instrument is made of rustless steel, and is very light. The aneurysm needle is flattened and takes up very little room in the wound. The shaft is serrated and is flattened at its end to an edge which is almost sharp. It is conveniently employed in conjunction with a pair of cilia forceps with very light springs, the points of which are toothed. Both instruments are also useful for fine dissections on experimental animals.

Messrs. Down Bros., Ltd., are the manufacturers.

A. KNYVETT GORDON, M.B., B.Ch. Camb.

Bedford-square, London, W.C.

[6] Schweiz. medizin. Wochenschrift,. vol. liii.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

THIS Section held its first meeting of the session on Oct. 1st, Mr. T. G. STEVENS, the President, occupying the chair.

Per-uterine Insufflation of Fallopian Tubes for Sterility.

Dr. I. C. RUBIN (New York) read a paper, enriched by numerous epidiascopic illustrations, entitled Diagnostic Value and Therapeutic Application of Per-uterine Insufflation of the Fallopian Tubes in Cases of Sterility. He said the method was devised to determine the patency of the Fallopian tubes, and that before its introduction it was necessary to do exploratory laparotomy in the kind of cases under review. In 1914 he commenced his attempts with collargol, but the results he did not regard as favourable, as patients complained of distension and epigastric distress, and when standing up there was pain in the shoulders and diaphragmatic region. Carbon dioxide was substituted for oxygen, as the former was more rapidly absorbed from the peritoneal cavity. With regard to spasm of the tubes, he soon realised that there were cases in which the first test by insufflation seemed to indicate that the tubes were non-patent, but on a second or a third trial gas was forced through the tubes into the peritoneal cavity, and a fourth repetition showed that the gas could be forced through at a relatively low pressure. In the early cases he was content with ascertaining whether, in a given woman, the Fallopian tubes were open, but it was now possible to ascertain by the method whether one or both tubes were open, and it was not necessary to inject opaque solutions. In cases of normal patency the pressure rose to 40, 60, 80 mm. of mercury, then dropped, then fluctuated for a time, and the patient did not complain of pain. If the pressure rose to 140 or 160 mm. and then dropped, it showed there was a distinct stenosis or obstruction which was remediable.

Contra-indications and Dangers.—The presence of purulent discharges from the cervix, vagina, and urethra constituted a contra-indication to insufflation, as did also the presence of tumour masses in the pelvis, and particularly if tense. Even if there were only tenderness in the pelvis on bi-manual examination, without a palpable tumour, he would not adopt the insufflation method. Those who prescribed the method originally and those who had followed the procedure carefully did not have any trouble from it at all. The cases of trouble were those in which the practitioner attempted it without having fully studied it, and had applied it at an unfavourable part of the menstrual cycle. It should never be practised during the menstrual flow, nor on women who suffered from serious cardio-renal disease. If cases were properly selected, danger from embolism could be practically discounted. The injection should be carried out slowly and carefully. He had not had any peritoneal reaction in 1600 cases. The safest time to insufflate he had found to be four or five days after the cessation of the last regular period. The worst time for it was just prior to a period falling due. A month should elapse before repetition.

Results.—Dr. Rubin said that since he adopted the method he had been seeing among his patients an increasing number of pregnancies. He had studied the effect on the menstrual period and noted that in quite a number there had followed a relief of dysmenorrhœa. In 1000 consecutive cases in his practice there had been 10 per cent. of pregnancies, and these were not ascertained from inquiry instituted, but were voluntarily reported by the women themselves. As a result of a questionnaire sent out there were reported 52 pregnancies out of 763 patients who were treated by the method for sterility. Most of the cases were of women who had been married four or more years, and when 10, 15, or more years of childless married life had been experienced, and then coitus following the insufflation resulted in pregnancy, he thought the claim of cause and effect was a just one.

In describing the mechanism of the procedure, by the aid of slides, Dr. Rubin pointed out the importance of the tube reaching well up beyond the internal os. In some cases a mucus plug, not visible at the external os, as it occupied the deeper portion of the cervical canal, was seen to be expelled after insufflation and when the cannula had been withdrawn. Such removal must, he contended, be a factor in some of the successful cases; and the same applied to the straightening out of tortuous tubes. He believed that in some patients the insufflation had a psychic effect on the patient, curing a spasm which had sufficed to close the uterine ostium.

Discussion.

In the brief discussion, Dr. S. FORSDIKE said he had been using the bulb method for 15 months, and thought the critics of that method had exaggerated the danger of escape of air. His use of the bulb method followed on some researches he conducted on cats with lipiodol, careful examination of the tubes of these cats showing that the use of the method on the human being was fully justified.

Mr. A. W. BOURNE, having used the method, said it would be a great advantage if X rays could be dispensed with as a means of ascertaining whether the gas had passed through the tubes, reliance being placed on hearing with the stethoscope applied to the hypogastrium the noise of the passage of the gas. He questioned whether the rubber acorn on the cannula sufficed, in the case of ulcerated and otherwise irregular cervical surfaces, to prevent leakage.

Dr. T. WATTS EDEN referred to two cases in which he tried the method. In one the patient had had one or two miscarriages and had a retroverted uterus which, he thought, was adherent. She was anxious to have a child, and he thought it would be a good chance to use the method, having the patient under anæsthesia in case an operation was required. There was a rapid rise to 300 mm., which was sustained, and no gas went through. He found the uterus was retroverted and lightly adherent to the pouch of Douglas. There were no tubal adhesions, and he could pass a probe up to the uterus on either side. The second patient had never been pregnant, but wished for a baby. Her uterus was large and hard, but movable, and there was no evidence of pelvic inflammation. According to the instrument there was a block in both tubes, but he found that she only had a small interstitial fibroid in the fundus of the uterus, both tubes being healthy.

Mr. VICTOR BONNEY said his view was that if a woman wanted seriously to have a child the aim should be to remove any structural defect which could be found, and that was one reason why he had not done tubal inflation except under an anæsthetic. If he found a tube was blocked, his practice was to open the abdomen at once. Sterility was commonly associated with retroflexion, and in many cases there was a blockage of the tubes. In some cases V-shaped kinks were found, and these could not in some cases be straightened out as a fine band united the two limbs of the V, and this had first to be divided.

Exhibition of Specimens: Endometrioma.

Mr. BECKWITH WHITEHOUSE (Birmingham) showed an endometrioma which had invaded the bladder of a single girl, aged 22, who had never menstruated. He said there was an element of doubt as to the ætiology of this class of tumour—i.e., as to whether endometriomata were due to regression of the menstrual discharge in the Fallopian tube, or whether they were grafts of endometrium upon the organ or peritoneum upon which they rested. This girl complained of intense pain in the pelvic region, particularly on the right side, at regular four-weekly periods, so severe as to compel a temporary cessation of work. She had never experienced menstruation in the ordinary

sense. Examination showed she was virgo intacta, that the uterus was irregular in shape, and the appendix somewhat matted. At operation the uterine appendages were found to be surrounded by adhesions; the tumour was on the anterior wall of the uterus. On opening the tumour there was an escape of the typical tarry material seen in a blood-cyst of the ovary. He therefore opened the bladder, took away a portion of vesical mucous membrane, sutured the bladder, and performed total hysterectomy. The specimen showed a cystic lined cavity, containing this tarry material. The patient made a normal recovery and she was now well and free from pain.

Mr. Whitehouse also showed an intra-ligamentary endometrioma from a married woman aged 33. The patient had been married five years, and in the year previous to attending hospital had had three abortions. At the second abortion she had a retained polypus, and was curetted by the exhibitor, who thought he detected an intra-ligamentary fibroid on the right side. After the third abortion the patient consented to the removal of this fibroid. He found a tumour between the layers of the right broad ligament, and carried out subtotal hysterectomy. On opening the tumour after removal tarry material, as in the last case, exuded. He did not favour the view that these tumours were implantations of endometrium.

Malignant Endometrioma with Lung Metastases.

Dr. A. P. THOMSON and Dr. F. W. M. LAMB showed a specimen of this description. The former said he was unable to trace a record of anything similar before. He saw the patient, a school teacher aged 27, in 1923, whose menstruation was normal and remained so until the end of her life. In 1923 she started a course of physical training to fit her for a post as games mistress, and after a particular swing race she became very blue and breathless. She returned home under the impression that her heart had been strained. She did her work with increasing difficulty, and in March, 1924, she was sent to Dr. Thomson. She said she had progressively lost weight, the total loss to date being 9 lb.; she also had great lassitude and became short of breath on exertion. There was but slight impairment of the percussion note over the right clavicle, and he heard some fine crepitant râles. There seemed a possibility that she had tuberculosis, and X rays showed a shadowing over the right upper lobe. He therefore sent the patient to Switzerland. When walking there with a medical friend the latter noticed that the patient's face appeared almost black against the snow. She was sent home, and Dr. Morley Fletcher, who saw her, found she had polycythæmia, the blood showing over 6 million reds. Following on repeated distress, Dr. Thomson saw her again in November last, and then the outstanding feature was an intense purplish-black cyanosis. While seated quietly in front of the fire the appearance of the face became almost normal, but the hands were very blue. In the chest there were now only a few fine crepitant râles at the apex of the left lower lobe. She then appeared to have gone to another physician, who told her to take more exercise, and, as a result of attempting to fulfil this instruction, she almost died in the street. A colleague was called and found her sitting in a chair much distressed, and there were crepitations over both lungs. A fortnight later she was seen by Dr. Stanley Barnes, and was still very cyanosed. Shortly afterwards she rallied and entered the hospital under Dr. Barnes. The red cells had then mounted to 12 million, and shortly after the number soared to 13½ million. The dullness on the left side was found afterwards to be due to a left pleural effusion, the fluid being chylous. She continued more or less in this state for six weeks, much oxygen being used to combat the cyanosis, and the red cell count dropped to 6½ million. But she had ascites due to the chylous fluid, and died soon after this started. No satisfactory cause for the illness was ever found. Post mortem a chylous effusion was found on the left side with complete collapse of the left lung. The heart and great vessels were normal. The right lung showed a curious emphysema, and in the abdomen, along the course of the aorta, there were enlarged glands. Apparently the chylous effusion in the abdomen and thorax resulted from direct pressure on the thoracic duct.

Dr. Lamb demonstrated the section of the growth in the recto-genital space, showing that it contained aberrant muscular tissue. No connexion could be found between the tumour and the other part of the pelvic organs. He preferred, for this tumour, the term adenomyoma, as its essential constituent was muscle. The lungs did not show a nodular metastasis, but were very friable, and looked like soft red rubber. A professor in Birmingham suggested that there might be some obstruction to aeration of the blood which did not, however, obstruct the vessels, and that seemed to be the case.

Reviews and Notices of Books.

THE NORMAL MIND.

An Introduction to Mental Hygiene and the Hygiene of School Instruction. By WILLIAM H. BURNHAM, Ph.D., Professor of Pedagogy and School Hygiene in Clark University; Member of the Joint Committee on Health Problems of the National Education Association and the American Medical Association. London and New York: D. Appleton and Co. Pp. 702. 16*s.*

WRITERS on the subject of mental hygiene and societies directed towards its promotion have been prone in the past to devote most of their attention to the subnormal and the abnormal. In this book, which is designed as an attempt to apply scientific knowledge towards the guidance of the development of mind, and particularly the mind of the school child, Dr. Burnham deliberately concentrates upon the normal, and only incidentally for purposes of illustration deals with departures from the normal, whether failures in development or temperamental inequalities of development. He starts with the fundamental proposition that the essential characteristic of the normal mind is integration of the personality, which implies adjustment to the environment. On the intellectual side of the mind he finds this integration expressing itself in the capacity for concentrated attention, the habit of orderly association; and on the temperamental side in the control of disordered instincts, the solving of mental conflicts, and the removal of harmful repressions. The means by which to attain integration is that of coördinated activity, physical and mental, in the doing of significant tasks. He promulgates three essential conditions of integration and therefore of mental health—the task, which may be anything from the immediate goal of the moment to the more remote ideals of life; the plan, which makes the work purposive; and freedom. These points are discussed with a wealth of detail. He devotes considerable space to the discussion of conditioned reflexes, not merely, however, from a theoretical point of view, but keeping always in view their practical significance in the formation of associations and habits.

Dr. Burnham lays much stress upon the necessity of discovering the superior mentalities and the special directions in which they are superior in order to constitute an ideal social group in which these superior abilities can be integrated for a common purpose. The chief application of intelligence tests in the broadest sense will, he considers, lie in the discovery of the superior individual and his superior talent. Two specially valuable chapters are that on the acquirement in school of right mental attitudes, suitable interests, and proper habits of study and thought, and that on suggestion. Freud's contributions to psychology are sanely applied, and placed in proper perspective. The book, while designed for educationists, is of value to anyone who desires to learn to think clearly and avoid the cultivation of bad mental habits. The medical man who is necessarily nowadays a psychologist will find it eminently

practical. To the school doctor it should be of special interest. If the book has a fault, it is in a tendency to prolixity.

A CLINICAL HANDBOOK OF MENTAL DISEASES.

For the use of Students and Medical Practitioners in India. By W. S. JAGOE SHAW, M.D. Belf., M.B., Ch.B., B.A.O., R.U.I., Lieut.-Colonel I.M.S., Superintendent, Central Hospital for Mental Diseases, Yeravda, Poona. Calcutta: Butterworth and Co. (India), Ltd. 1925. Pp. 202+29. Rs.3.

THIS interesting and instructive little book is eminently suitable for its purpose. Directed to the assistance of the student and practitioner in India, who no doubt must often be called upon to face the practical problems involved in the treatment of mental disorder, it provides in a comprehensive and compact form just the information he requires to enable him to envisage his difficulties and to see roughly on what lines he may solve them. Naturally, the subject is treated somewhat superficially and contentious matters are avoided, but the author has introduced all that is of practical importance and the book is in every way quite up to date. The appendices which deal with the practical methods of securing the proper accommodation for the treatment in India of both Europeans and Indians, civil and military, and of arranging for the transfer from India to England, are very important. It is in such matters that the patient is most liable to suffer from the lack of experience of the practitioner. The low price of the book should make it accessible to all who may be brought into contact with the mental patient.

LOCAL ANÆSTHESIA.

Die Örtliche Betäubung. Seventh edition. By Prof. Dr. HEINRICH BRAUN. Leipzig: Johann Ambrosius Barth. 1925. Pp. 511. M.22.50.

The Technique of Local Anæsthesia. Third edition. By ARTHUR E. HERTZLER, A.M., M.D. London: Henry Kimpton. 1925. Pp. 272. 25*s*.

THE increasing interest which is taken in local anæsthesia is reflected in the two volumes before us. Both are new and enlarged editions of well-established works and they include many pages devoted to methods not even mentioned in former editions. Prof. Braun deals with the subject with the thoroughness familiar to students of his earlier editions and characteristic of the German mind. Commencing with the great aphorism of Hippocrates "Divinum est opus sedare dolorem" he traces the history of local anæsthesia from the earliest times down to the present day. From the use of compression by Patroklus at the siege of Troy he tells the story of the use of cold by Larréy in the Russian campaigns down to the superb injection methods of modern anæsthesia. It is strange that cocaine, discovered by Pizarro in 1572, should only in 1884 have been used by Kollers for the anæsthesia of the eye. In spite of its dangers cocaine remains pre-eminent as the most powerful anæsthetic we know, but Prof. Braun gives an exhaustive account of the many substitutes which chemical research has placed in our hands, and of which novocaine, until quite recently, has been the most successful.

The surgical methods of anæsthesia are described by Prof. Braun with great elaboration and with a completeness of technical detail which will appeal to all who practise their use. The instruments required are exactly described and beautifully illustrated, and on every page will be found hints invaluable to the practical surgeon. The application of local anæsthesia to the various regions of the body are fully described and superbly illustrated, and include a full discussion of such up-to-date methods as sacral and splanchnic anæsthesia. The volume is replete with original ideas, and the method of anæsthetising the palm from the back of the hand is a surgical manœuvre so neat as to repay the cost of the book. From the illustrations a surgeon, even without a knowledge of German, may learn a vast amount about technique. The book concludes with a list of 2000 references, obviously selected with great care. To the student of German psychology two small points will be of interest. From the text no fewer than 4000 foreign words have been expurgated and the title of the book has been changed from "Lokal-Anästhesie."

Dr. Hertzler's volume makes no pretension to encyclopædic compass, but succeeds in giving a sufficiently full account of the methods of the art. The book is well printed and illustrated, and those who wish for practical information without great elaboration will find it ample for their purpose. There can be no question that local anæsthesia has a great future before it, and surgeons will be grateful to the authors of these two volumes for their assistance in one of the most beautiful of the surgical arts.

ANATOMY.

Buchanan's Manual of Anatomy, including Embryology. Fifth edition. Edited by E. BARCLAY-SMITH, M.D., King's College, London; J. E. FRAZER, F.R.C.S., St. Mary's Hospital; F. G. PARSONS, F.R.C.S., St. Thomas's Hospital; and W. WRIGHT, F.R.C.S., London Hospital. London: Baillière, Tindall and Cox. 1925. With 810 illustrations, mostly original and in colours. Pp. 1702. 35*s*.

THE last edition of this popular manual, which appeared six years ago, was produced under the editorship of a committee of anatomists in London, but as it was largely in the nature of a reprint their efforts were subject to considerable restrictions. In the present instance they have had a freer hand, and have revised and in some cases extensively rewritten the text, while adhering in the main to the general arrangement. This is particularly noticeable in the sections dealing with the limbs. Many new and good illustrations have been added. As hitherto, the book deals with anatomy from the regional standpoint, and for this reason is eminently suitable for general reading. The old terminology is adhered to. An excellent index facilitates use as a book of reference.

As regards embryology, the work includes what is practically a new manual on the subject. There is a chapter on general embryology at the beginning of the book, and the more detailed development of the various organs is described under the several headings. The descriptions are sufficiently long to fulfil their purpose and sufficiently short to invite reading, and we feel sure that the student will welcome this section, requiring as he does authoritative, concise, and up-to-date information on this, to him, nebulous branch of anatomy. The practical guide to dissection omitted from the present volume is to be published independently.

We can confidently recommend the new "Buchanan."

CASE-TAKING.

Notes on Medical Case-taking and the Examination of Patients. By G. S. HAYNES, M.D., M.R.C.P., Assistant Physician, Addenbrooke's Hospital. Cambridge: W. Heffer and Sons, Ltd. 1925. Pp. 57. 3*s*.

THIS is a handbook for the use of students in their examination of clinical cases, of a size easily carried in the pocket, interleaved with blank pages for notes. The main systems are set out in reasonable detail, without cumbersome minutiæ, the circulatory system having more space devoted to it than the alimentary, respiratory, and nervous. Curiously enough, the hæmopoietic system has been omitted altogether, while under the nervous system there is no mention of the examination of the pupils. The author has noted the significance of important signs in order to make the manual more lucid to the student. A typical case record is included.

Handbooks of this type are of assistance to the student in forming habits of systematic observation of cases, and this is a good example of the type.

PRACTICAL OPHTHALMOLOGY.

Causeries d'Ophtalmologie Pratique. By Dr. A. CANTONNET, Ophthalmologist to the Paris Hospitals. Paris: A. Maloine et Fils. Pp. 325. Fr.16.

THIS little book, a welcome variety from more formal text-books, contains much useful information, and is sufficiently stamped with the individuality of the author to make it interesting to the advanced student. It is before all things practical, and begins characteristically with a description of how best to examine the eyes of a photophobic child. It is by no means limited to the elements of the subject, however, and we very soon come to a section on examination with the red-free light and another on testing the sight of the aviator. Details of refraction and operative treatment are not dealt with, but the chapters on symptoms and diagnosis contain matter of interest to every surgeon. It is pointed out, for example, that in recent cases of syphilis with headache there may be hypertension of the cerebro-spinal fluid from subacute or chronic serous meningitis, and this may be the cause of choked disc. Another possible cause not generally recognised is traumatism of the skull. In any case of choked disc temporary obscuration of vision should be regarded as a danger-signal calling for serious consideration of an operation for decompression. In some cases of ophthalmia neonatorum no gonococci can be discovered, and it is probable that these cases are caused not by microbes at all but by non-microbic structures which have been found in the conjunctival epithelium of the infant, as well as in the vagina of the mother and the urethra of the father. One cause of those cases of muscular paralysis often ascribed to cold is arterio-sclerosis.

These are samples of the subjects of these lectures, and although the opinions of the author are not invariably orthodox, they are always worthy of consideration. The author has an original mind. In connexion with binocular vision he invented the well-known experiment of the "hole in the hand." In this book there are diagrams which we do not remember to have seen elsewhere, showing the different effects of salt solutions of different concentrations on the cornea. Even in such a subject as the non-operative treatment of glaucoma, a method of administering pilocarpine drops is described which seems well worthy of trial.

EXPERIMENTS IN GENETICS.

By C. C. HURST. Cambridge University Press. 1925. With 175 figures. Pp. 578. 50*s*.

THIS handsome quarto contains the record of 30 years of active work in breeding animals and plants. It consists of reprints of 38 papers and addresses. The first, published in 1897, deals with the curious generic hybrids which can be made in orchids; the last (1925) is an analysis of the chromosome constitution of the species of Rosa throughout the northern hemisphere which ends with a promise of a great deal more on the same subject. The wide field which Dr. Hurst has covered at Burbage in Leicestershire includes also the coat colour of rabbits, fowls and their fecundity, horse-breeding, snapdragons, human eye colour, and other subsidiary subjects of genetical inquiry. The whole forms a record of which anyone might be proud, and it covers a moving period in the history of inheritance, because the early observations were made in pre-mendelian days and the latest in the light of the most modern cytological refinements. It constitutes in this way a sort of running commentary on the progress of the science of genetics, and it is for the most part easily intelligible to those who are not very familiar with the advanced nomenclature of mendelism. We could have wished for one improvement—that the author had made rather more ample commentary on his earlier results in the light of what has transpired since. His notes are few and brief.

TREATMENT.

A Text-book of Practical Therapeutics. Nineteenth edition. By HOBART AMORY HARE, M.D., Professor of Therapeutics, Materia Medica, and Diagnosis in the Jefferson Medical College of Philadelphia. London: Henry Kimpton. 1925. Pp. 1061. 36*s*.

A NEW edition of this book follows quickly on the last; a successful book in medicine and its branches has to come out often, for medicine is changing rapidly. The use of insulin, the internal application of iodine in exophthalmic goitre, the development of the Schick test, variation in drugs used in syphilis, all mark steps of advance. As in previous editions this book, which is really an index of treatment, consists of four parts, all alphabetically arranged—namely, general considerations, drugs, remedial measures other than drugs, diseases. Information may thus be reached from different sides either under the disease or under the remedy; cross references and indexes are full and good, so that everything is easily found. The reader will like the book better the more closely he studies it; it is full of information and eminently readable.

Ghosh's Treatise on Materia Medica and Therapeutics. Tenth edition. By BIRENDRA NATH GHOSH, Examiner in Pharmacology, University of Calcutta. Calcutta: Hilton and Co. 1925. Pp. 718. 10*s*. 6*d*.

THIS edition of Rakhaldas Ghosh's book has been undertaken by B. N. Ghosh alone, as Major-General B. H. Deare has retired. It has now passed through five hands in its ten editions. The present edition does not differ much from the ninth in general form, but several drugs on which recent work has been done have been written up afresh. Some of these, as antimony in leishmaniasis and carbon tetrachloride, are of especial interest to the Indian student. The book is a good, if somewhat heavy, summary of pharmacology and therapeutics culled from the best sources. The editor acknowledges that he has availed himself of the work of Cushny, Clark, Dixon, and Sollmann, than whom there are no better exponents of pharmacology.

TEXT-BOOK OF MEAT HYGIENE.

By RICHARD EDELMANN, Ph.D., Professor at the Royal Veterinary High School, Dresden. Fifth revised edition by JOHN R. MOHLER, A.M., V.M.D., Chief, United States Bureau of Animal Industry; and ADOLPH EICHHORN, D.V.S., Director, Veterinary Department, Lederle Antitoxin Laboratories. With 161 illustrations and 5 coloured plates. London: J. and A. Churchill. 1925. Pp. 478. 25*s*.

THIS text-book has now passed through five editions and would seem, therefore, to be established as a standard work upon the subject. The book may be considered from two points of view—i.e., as a source of scientific information upon animal diseases, and as a practical guide to meat inspection. Its chief value lies in the information given on the anatomy and physiology of the normal animal and on the most important diseases which may affect animals used for human food. There is a detailed account of the distribution of the lymph glands in animals, the peculiarities of meat from different animals is discussed, and the various bacterial diseases and animal parasites are described in detail. The bacteriological examination of meat as a help to diagnosis is too briefly touched upon to give substantial help. The account of putrefactive change on its bacteriological and chemical side is inadequate, and Eber's ammonia test for putrefaction is still described and illustrated, although it is generally recognised as useless, whilst more modern tests are not even mentioned. Chapter XI., which deals with meat poisonings, is the kind of article which was written on the subject a dozen or a score of years ago. It ignores most of the modern work on

the subject, and no one reading it would obtain an accurate account of our present knowledge of meat and food poisoning. It is true ptomaines are not brought forward in this connexion, but decomposition changes and poisoning from *B. coli*, proteus species, &c., are mentioned as important causes of meat poisoning. The section on botulism still gives sausages as the most important causes, while all the recent American work on this bacillus and its relationship to canned foods and to animal diseases is ignored. The account of van Ermengem is accepted as the latest and final information upon the subject.

From the administrative point of view the book is of little service to English meat inspectors. Chapter IV. gives an extended account of the regulations governing the meat inspection of the United States Department of Agriculture which is of interest but is not applicable to English conditions. The judgment sections all deal with American practice. The chapter on abattoirs deals solely with Continental and American conditions and is not of much help as regards the slaughter-houses which prevail in this country. A handbook which at the same time provides a scientific and up-to-date account of the physiological appearances and pathological conditions which occur in animals used for food, which is a reliable guide to their detection and also gives simple accurate information as to the judgment which should be exercised in their condemnation or passing for human food is much needed. While Dr. Edelmann's book contains a vast amount of valuable information it cannot be advocated as a satisfactory practical text-book for the meat inspector in this country.

CONSTITUTIONAL DISPOSITION.

Die Konstitutionelle Disposition zu Innere Krankheiten. Third edition. By Dr. JULIUS BAUER. Berlin: Julius Springer. Pp. 794. 89.60.

A BOOK of 800 large octavo pages, published in so unfavourable a year as 1917, which has reached a third edition, must obviously be meeting a demand, and undoubtedly such a work as this of Dr. Julius Bauer needed to be written. Of recent years the attention of medical workers has been mainly directed to the agents which, entering the body from without, give rise to disease, and to the mechanisms by which the tissues protect themselves with greater or less success; whereas the inherent qualities of his tissues, which render an individual more or less liable than his fellows to this or that malady, have received much less attention. Diathesis which figured so largely in the medicine of our grandfathers is a word seldom heard nowadays, and we are in danger of forgetting that not all of pathology can be studied in the laboratory.

It is time that we should turn our thoughts back again to the study of constitutional tendencies and of the outward signs by which, in some instances, special liabilities may be recognised. Such a study needs to be based upon the knowledge now available of heredity, idiosyncrasy, protein, sensitivity, balance of hormones, and individual and specific chemical peculiarities. It has been the self-imposed task, and certainly no light one, of Dr. Bauer to bring together such information upon these subjects as bears upon disposition to diseases of various kinds. Whilst he admits the truth, at the time when it was pronounced, of the dictum of Germain Say, "La disposition est un mot pour masquer notre ignorance," he holds that the time has come when it is possible to define the share of constitutional tendencies in the pathogenesis of individual maladies.

The amount of information collected between the covers of this book is immense, and he who seeks to obtain knowledge of any special deviation from the standard of which we speak as the "normal" will seldom be disappointed, whether such deviation be one often met with or one which is extremely rare. The earlier chapters, which occupy rather more than 100 pages, treat of the subject of constitutional predisposition in its general aspects. The views of various writers, and the nomenclatures which they adopt, are described and discussed. Signs of degeneracy, structural and functional abnormalities, and such anomalies as persistent infantilism and premature senility, are considered. In a full and interesting chapter the liability of some individuals to, or natural immunity from, particular infective diseases receive due attention. The later chapters deal with the several systems and organs in turn; with the anomalies met with of their form and position, individual variations of their functional capacities, and the bearing of all these factors upon the liability of the patient to be attacked by various maladies, and of particular organs to bear the brunt of the attack.

Obviously the whole subject is very complex, and there is little in common between such factors as shape of thorax and lungs as a predisposing cause of pulmonary tuberculosis and a sensitivity to certain proteins which predisposes to asthma. Thus, under the heading "kidney," to take a single example, we find sections which treat of malpositions and malformations of those organs, of obstruction of urine due to structural anomalies, and of congenital cystic kidney. Amongst functional anomalies are included the so-called renal glycosuria and the several varieties of functional albuminuria. Special liabilities, usually hereditary, to nephritis and granular kidney also receive consideration, as also do ischuria and polyuria, the tendency to form calculi, and liability to urinary disorders of nervous origin. Clearly when treating a theme so vast individual items must often receive but brief consideration; for the benefit of those who desire to look further into particular items an ample bibliography is provided, which covers no less than 140 pages; and there is an adequate index.

INCOMPATIBILITIES IN PRESCRIPTIONS

Fifth edition. By EDSELL A. RUDDIMAN, Ph.M., M.D. London: Chapman and Hall, Ltd.; New York: John Wiley and Sons. 1925. Pp. 330. 12*s.* 6*d.*

THE first hundred pages of this book present the common incompatibilities in concise form, the substances treated being arranged in the alphabetical order of their Latin names. This section should be of real value to the busy prescriber. The next section (of about 50 pages) is intended more for the student of pharmacy; it contains a list of 480 prescriptions as an exercise, so that he may study them and find out for himself where the fault is to be found in each one, and the best means of avoiding it. Then follows another long section containing clear and detailed criticism of these prescriptions by means of which the student may check such conclusions as he may have been able to draw. The last section contains a useful table showing the effect of rubbing together equal weights of two solids, and a series of tables showing the solubilities of all the commoner drugs in water, alcohol, ether, chloroform, and glycerine, together with a column showing the solubility of some of the drugs in miscellaneous solvents. A serious blemish in this table of solubilities is the absence of any explicit statement as to the meaning of the figures, the reader being left to deduce the fact that they refer to parts of solvent to one part of dissolved substance. No temperature is indicated; presumably that vague idea, "room temperature," is implied.

The book concludes with two good indexes: one of incompatibilities, the other of prescriptions. It is well printed, and should be a useful desk companion to prescribers and students in this country. It could, we think, be improved by the inclusion of a short introductory section dealing with the general principles of incompatibility.

Mr. Henry Kimpton is the English publisher of C. E. Turner's "Personal and Community Health," reviewed on p. 702 of our last issue. The price is 12*s.* 6*d.*

THE LANCET.

LONDON: SATURDAY, OCTOBER 10, 1925.

POST-GRADUATE EDUCATION.

IN a foreword to the first number of the *Post-Graduate Medical Journal* Sir WILLIAM HALE-WHITE compares the newly qualified doctor to a mariner setting out on a voyage over changing seas. For a time he is well served by the charts which his teachers have given him, but as he finds that the best of charts provided by others cannot meet the developments or emergencies with which he is confronted, he begins, consciously or unconsciously, to make charts for himself. And as the years pass he finds that he requires help in dealing with the new currents; truer soundings have made old observations obsolete, while fresh waters are opened which were uncharted in his pupillage. To provide opportunities for such revision is to raise the standard of medical work, and to meet this need alone justifies the establishment of post-graduate education in this country. The great mass of medical practice must be carried on by individuals largely upon their own responsibility, and it is a function very appropriately performed by the great London hospitals when they offer to their qualified men fresh inspiration in aims, methods, and ideals.

That such an offer evokes an enthusiastic response is shown by the success of the course of lectures given during last week-end at St. Mary's Hospital; an account of the proceedings will be found in another column, and similar developments in this direction at other centres are inevitable. The constituency to be assisted is ready to the hand, and on one side the material from which to draw the necessary teaching is present in superabundance. But while—if the simile is not being too much laboured—the general mariners may be expected to increase in number, and while the object-lessons are aggregated in miserable wealth in the metropolis, we are apt to forget that the pilots are in a most difficult position. Just as to get an accurate knowledge of special seas, and to train for an extra-master's certificate is not easy, except as the result of long preparation, so special teaching in medicine is not a fortuitous accomplishment. Further, many who possess the necessary qualities and gifts may not be available for their distribution; and the arrangements for the work are in London ill-organised because of the vast size of the metropolis, and, at bottom, because of the absence of a great clinical centre. The sound work of the Fellowship of Medicine can be estimated now that that body is issuing regularly a journal, which will be published monthly under the editorship of Dr. ADOLPHE ABRAHAMS. For many years the Fellowship has done its best to remedy the defaults in London for post-graduate education, and has placed at the disposal of graduates a fine assortment of sound teaching, for English teachers are as good and as enthusiastic, given the appropriate milieu, as any European professors. But our great hospitals have a routine for the training of their undergraduate students which assorts ill with post-graduate lecturing and demonstration, and all the experience of those who have thought long and worked hard at the subject points to the institution of a great clinical centre. Meantime the Fellowship of Medicine will continue its useful ministrations. As we are reminded in its new organ, the Minister of Health has appointed a committee, with this reference: To draw up a practicable scheme of post-graduate medical education centred in London. The Committee is strongly constituted and has the situation left by the Athlone Committee in May, 1921, to deal with. The Athlone Committee recommended that a school attached to a hospital centrally situated in London should be devoted solely to post-graduate medical education, a school of the University of London being suggested. A meeting was summoned early in this year by the Fellowship of Medicine, at which free expression of opinion on the existing arrangements for post-graduate teaching was invited, when representatives of the Military and Naval Services expressed satisfaction with the arrangements made for their medical officers; but the conditions in the Services are special, and too much stress must not be laid upon success along this line, gratifying though it is.

A second foreword to the *Post-Graduate Medical Journal* is supplied by Sir BERKELEY MOYNIHAN, who deplores the readiness with which the practitioner—only too naturally—is content to practise on the medicine learned in student days, not realising the joy of dwelling in a land of advancing frontiers. He urges the necessity for practitioners, despite the over busy day to which he pays tribute, to find short periods for reading, as well as leisure to attend meetings of a medical society and the instructions of a post-graduate class, adding with regard to the last the wise comment that discussion and controversy are of the very spirit of scholarship and that comradeship with those who labour transforms competitors into colleagues. The great thing on which all are agreed, then, is that there should be opportunities for practitioners to keep abreast of recent knowledge by contact with those who have the ability and the willingness to teach. And in order to meet this great need of "keeping in touch" the inevitable conclusion is reached that in London, and, indeed, in other large cities, there should be a medical school for post-graduate workers. As far as London is concerned, the cost of providing such a centre, with lecture halls, laboratories, and perhaps a hostel where post-graduates could lodge, has caused the scheme perpetually to be set aside, but it is becoming more and more obvious that only by the foundation of a real post-graduate institute can London take up its right place as the centre of medical teaching not only for the metropolis but for the Empire, attracting also the keenest minds among foreigners. The ideal should be ever present.

THE SOCIAL HYGIENE CONGRESS.

SOON after the outbreak of war in 1914 the Eugenics Education Society addressed a request to the Royal Medical Colleges to support a movement for national education on the subject of venereal diseases. The time was opportune; the Royal Commission on Venereal Disease had just brought in a report making clear for the first time the great prevalence of venereal disease and the inadequacy of the provision for its treatment, especially in London. The segregation in camps of large numbers of sexually active men made immediate action desirable, and a National Council was formed, which held its inaugural meeting on Nov. 11th, 1914, when the aims and objects, as set out, may be summed up as follows:—

To provide public information and medical education, to organise early treatment, and to promote legislative reforms. A strong executive committee

was constituted with Dr. DOUGLAS WHITE and Mrs. GOTTO as honorary secretaries.

Eleven momentous years have elapsed since this beginning was made, and this week we report the second Imperial Social Hygiene Congress which is the culmination of the work of the National Council. It is difficult for those without long memories to picture the change of fact and heart which have occurred during those 11 years. It was not an impossible thing at that time for a medical student in his clinical years not to know the meaning of venereal disease. The Secretary of State for the Colonies reminded the Congress that in 1911 he found it all but impossible to get a single Member of Parliament to say a word on the subject of venereal disease, and the conspiracy of silence continued almost unbroken until the National Council began its work. Facilities for treatment would be idle unless the public knew what venereal disease is and where these facilities were to be obtained, but enlightenment has been so complete that during the year 1924 over 1,500,000 attendances were made at treatment centres in England and 81,806 attendances in Wales. During little more than a decade the treatment of venereal disease, previously limited to a tiny group of "lock" hospitals and the casual care of general out-patient clinics, was replaced by expert treatment under conditions of entire confidence and secrecy at 184 centres in England and 10 centres in Wales. At several centres in London continuous out-patient venereal clinics are held daily, and a similar centre for women only was recently opened at the Royal Free Hospital; auxiliary clinics for the treatment of mothers and infants are under consideration at the present time in Wales. The effect of all this on the incidence of disease is now beginning to make itself felt, for comparing 1924 with 1920 the number of new cases of syphilis has fallen by nearly 50 per cent., and new cases of gonorrhœa by 23 per cent. Legislative action in this country has not taken any stringent forms. The Venereal Diseases Act, passed in 1917, was little in advance of the public opinion of the day or of the habits of the people, and the only subsequent legislative Act in this country has been the useful little measure providing gratuitous treatment for the mariner at various ports of call. During this time, however, some of the self-governing Dominions have passed legislation making notification a statutory duty on the medical practitioner and even enjoining patients themselves to report within a specified time in face of severe penalty. These measures, as Mr. C. M. KOHAN pointed out at the Congress, have, as yet, proved little more than pious aspirations. Queensland, the pioneer of compulsory measures, continues satisfied with their administrative aspect, while regretting the unwillingness of its medical men to fall in completely with the obligation laid upon them. In this country we have remained content with the secrecy of the clinics, hoping thereby to secure the efficient treatment of many who otherwise would be unwilling to attend. Unfortunately, in the last recorded year 40 per cent. of the total cases ceased to attend before treatment was complete, although many of them are believed to have been rendered non-infective before ceasing their attendance. More successful following-up measures have been instituted in certain places, especially Edinburgh.

While all this registers tremendous progress, on which it is well to insist afresh, the situation with regard to the volume of venereal disease is one which must continue to command the attention of the British Social Hygiene Council for many years ahead. Present incidence of congenital syphilis is described by Colonel L. W. HARRISON as a reproach, when the disease is a horror which can be completely prevented. The returns for 1924 showed 2532 cases of venereal disease in England under the age of 7 years, 1826 of these being congenital syphilis, the balance largely being those who acquired venereal disease apart from sexual misconduct. In the Navy, for the latest year in which complete figures are yet available, there were, for every 1000 men 113 entries for venereal disease during that year, and the average daily number of sick men was 892. In spite of a recent decline the rate of venereal disease in the Army in 1922 was still 25·9 per 1000, and Major E. C. LAMBKIN felt it incumbent upon him to assure the Congress that the Army did not condone or encourage sexual irregularity. As a matter of fact 20 per cent. of soldiers became infected while absent on leave; and special difficulties are contended with abroad, particularly in Turkey and on the Rhine—for in Cologne alone there are reputed to be 6000 prostitutes. Similarly, the risk of China and Cape Town to the sailor is very imminent. These figures are sufficiently alarming and indicate that the problems, especially abroad, are not by any means within sight of solution. Ignorance, indifference, and fatalism in the colonies take the place of the despairing public outlook and the deliberate concealment which constitute the chief difficulties at home. Mr. AMERY indicated the existence of a Committee of Civil Research, corresponding on the civil side to the Committee of Imperial Defence, which was concerned for the security of national life. The Congress provided opportunity for exchange of information in regard to venereal disease over a very wide area, which may well be considered by this Committee. In Fiji, Dr. P. T. HARPER expects syphilis to appear amongst the Fijians in proportion as the ritual inoculation with yaws declines. In Nyasaland, where the problem seems to be primarily political. Dr. G. M. SANDERSON aims at training up a native medical profession to spread enlightenment in the villages. In Palestine Dr. J. W. HARKNESS regards the mild endemic syphilis of the rural population as the result of social rather than sexual intercourse. Amongst such people education must be by word of mouth and is a slow and laborious process; pictorial illustration is hard to devise; to the unimaginative native an enlarged culex on the screen may be indistinguishable from a camel. In India, where Sir LEONARD ROGERS regards early marriage as a safeguard, and where the Central Provinces are still relatively free from disease, Major-General A. HOOTON can see little prospect of progress until more efficient instruction is offered at the medical colleges and schools. A moving picture was drawn by Dr. KATHLEEN VAUGHAN of venereal disease in Kashmir, where there is no teaching of any kind on the subject for boys and girls except that given in the few mission schools. The British Social Hygiene Council has in prospect a campaign of social service which will embrace the education in hygienic living, a serious attempt to prevent disease by improving environment, and a review of all aspects of the problem in the Empire.

THE MEDICAL ASPECT OF INDUSTRY.

IN his presidential address to the Brighton and Sussex Medico-Chirurgical Society on Oct. 1st Mr. H. J. Walker dealt with the work of the factory surgeon as an important branch of preventive medicine, and one likely to receive attention in the present Parliament. After reviewing industrial conditions in the early nineteenth century and the revolution already brought about by factory legislation, he commented on the fact that even in the

present year 37 cases of lead poisoning and six of anthrax were reported to the Home Office, in addition to seven other cases of lead poisoning amongst house painters and plumbers, and he went on to remark on the possibility of eliminating altogether industrial injury from such things as lead, mercury, arsenic, phosphorus, or anthrax. Turning to the larger aspect of industrial problems, Mr. Walker quoted with approval the statement that industrial medicine, if properly applied, might effect a saving of many millions a year in sickness benefit. At present it is only in a few dangerous trades that medical inspection is compulsory. Little objection, he thought, would be taken by the workman to medical examination, provided he thoroughly understood it was for his own benefit. Men continued to work, when unfit to do so, day after day for fear of losing their employment, and there was no doubt that they lost more than they gained in the long run. "Some time back," said Mr. Walker, "I was called to see a man who was found dead in a railway carriage. He was employed in the building line and had been seen running to catch his early morning train. On post-mortem I found a large calculus in one of the valves of his heart. I was informed by his wife that the man had not consulted a doctor for many years and had never complained of any trouble. In another case a man knocked his shin whilst at his work and sought no medical advice until he was incapacitated from work, when on examination the leg was found to be acutely septic. Osteitis of the tibia had developed, necessitating an operation with a prolonged stay in hospital, and a final appeal to the law courts for compensation." He often saw cases of dermatitis and eczematous ulceration of hands and forearms caused by irritation from flour, sugar, mercury, fur preparations or various solutions used in factories. When these cases came for disablement certificates, in order to obtain compensation, the disease in most cases was far advanced, the man having continued his employment until the irritation and annoyance had become almost unendurable. The Factory Bill now before Parliament suggests that young persons up to the age of 18 should be medically examined before starting work. After that age they are supposed to be capable of looking after themselves. Of this, Mr. Walker is very doubtful. "Under the present economical system," he said, "the exigencies of work prevent proper attention being given to health. I would suggest that in all factories and workshops young persons, up to the age of 18, should be examined every six months, a health register being kept with full particulars of the work. If not suitable, and the employer and the employee wish to continue with the same work, the latter should be examined again in six months. If the work is then found to be deleterious to the employee's health, the medical attendant should have power to suspend him from that work. All employees should be compelled to seek medical advice for all injuries and diseases of more than a week's duration, and should not be allowed to return to work without a medical certificate of fitness. Examinations should be compulsory every six months in trades which have a tendency to undermine the employee's health." Mr. Walker admits that there must be individual hardships, but contends that the gain to the community at large would far exceed any hardship to the individual. The expense incurred would be compensated for by filling factories and workshops with healthy and willing workers. More unrest, Mr. Walker thinks, is caused in the industrial world by poor health and uncongenial surroundings than from low wages and all other reasons combined.

BRITISH DENTAL HOSPITAL.—The annual general meeting will be held at the rooms of the British Dental Association, 23, Russell-square, London, W.C., on Thursday, Oct. 15th, at 8 P.M., when Dr. James Wheatley, county medical officer of health and school medical officer, Salop, will give an address on Dental Propaganda. Sir Harry Baldwin, the President, will preside.

Annotations.

"Ne quid nimis."

THE CARE OF THE PRIMIGRAVIDA.

A CORRESPONDENT has suggested that it should be made obligatory for every woman in her first labour to be attended by a registered medical practitioner. The question is important and difficult to answer off-hand. Undoubtedly, at the present time certified midwives conduct a large proportion of first labours without medical assistance, for the most part with complete success. Our correspondent maintains, however, that the first labour is liable to certain complications, which require the wider knowledge and greater skill of the qualified practitioner to recognise and deal with them in time to prevent undesirable results. The practice of the metropolitan hospitals indicates to a certain extent the attitude of the best obstetrical authorities. If they do not recognise any necessity for distinguishing between the primipara and the multipara, it is probable that the present safeguards that surround the practice of midwifery are adequate. The district maternity work of a London hospital is conducted by medical students, from whom different hospitals demand a different standard of qualification. We have inquired of several London hospitals what these standards are. One demands an attendance at five cases before the student conducts an outside confinement; one, under a new regulation, exacts a month's experience; while all others which have a lying-in ward demand a certain amount of inside training. In all except one hospital a qualified obstetrician accompanies the student on his first one or two district cases. A medical student who has completed his clerkship and dressership should have a wider outlook than the midwife, but his brief experience of the labour ward will not make him her equal in her own specialty of obstetrics. If, therefore, the student is considered sufficiently qualified after this training to attend all classes of confinements, it would appear that a midwife who has taken her C.M.B. diploma can quite well be trusted with first labours under the existing legal safeguards. It is interesting to note that none of the hospitals who have favoured us with their opinions make any distinction in practice between primiparæ and others. Nearly all these hospitals, however, attach great importance to the work of the antenatal clinics that they maintain. All women who desire to be attended from the hospital for their confinement are seen at the antenatal clinic early in their pregnancy for a thorough examination, and are examined again towards the end of their time, so that any abnormality that might interfere with labour can be properly treated and its evil results anticipated. Unfortunately, however, only a very small number, comparatively, of expectant mothers in the country come under antenatal examination, and the distinction between primiparæ and others, which London hospitals disregard, may have to be considered among women who undergo their confinements in their own homes. But antenatal work at welfare clinics is slowly but surely making itself felt. A report,[1] which has just reached us, is based on replies received from 500 out of the 641 antenatal centres so far established. These indicate that vigorous work is being carried on in the great majority of areas covered. In 61 per cent. of the centres the medical officer in charge of the clinic has the status or the experience of an obstetric specialist, while most of the remaining 39 per cent. are, or have been, in general practice with large numbers of midwifery cases. An interesting point raised was as to the practice at the various centres with regard to vaginal examination. In only 18 per cent. of clinics was this

[1] Report into the Work of Existing Antenatal Centres, being an Inquiry based upon a Questionnaire sent out by the Association of Infant Welfare and Maternity Centres (117, Piccadilly, London, W. 1s.).

examination made as a routine procedure, 69 per cent. making it only where considered advisable. This group may increase as experience in antenatal work grows. In the light of available evidence we hardly think that alteration in the existing law would be justified.

SOME LITERARY DEATH-BEDS.

STRESS of life counts high in the literary world to-day. Nevertheless litterateurs of the nineteenth century died, as a rule, at an earlier age than they do now, and they seem to have died of curious ailments. This is apparent from the perusal of Mr. Stewart Ellis's "Mainly Victorian," a collection of essays and biographical notices recently published. The author deals with 30 or more distinguished authors and others connected with English literature whose busy, but often not exceptional, lives ended prematurely during the nineteenth century. Charles Lamb, with some of whose hitherto unpublished letters the volume opens, died, if not at too early an age, then at least out of due season. At the age of 60 he stumbled and slightly injured his face. This brought on erysipelas, which proved fatal. Latterly he had been a hard drinker, but his life had been one of steady indoor work with no particular excitement or excess. Ann Radcliffe, a popular writer of terrifying stories, died at the age of 59, the cause of death not being stated, though her state at the last was one of extreme weakness, and her last words were the comfortable phrase, "There is some substance in that," in allusion to some nourishment administered to her at midnight. Richard Harris Barham, a convivial Church dignitary, author of the famous "Ingoldsby Legends," died prematurely. In 1844 a severe chill brought on violent inflammation of the throat, from which he continually rallied only to become weaker. He was moved restlessly from place to place in search of health, and his old bizarre humour flashed forth for the last time with the remark, as he was carried into his London house, "that he was indeed at Amen Corner." Mr. Ellis then describes the death-bed scene, "when a man of but 56 years of age, and with his brilliant mental powers at their zenith, calmly faced with the bravest fortitude the most appalling experience of humanity." Sorrow at the loss of children and friends may have contributed to early collapse in the sensitive merry writer, but that is not enough to account for a typical nineteenth century death, at once premature and caused by seemingly remediable conditions. Captain Marryat died of cerebral hæmorrhage at the age of 56 in 1847. He also was carried about from place to place in search of a better climate, as though that would assist him. At the last he was kept alive on lemonade, dying in stupor. He had been an intrepid and hard-working naval commander, one who consistently burnt the candle at both ends. He wrote against time, and neglected an old tendency to rupture of blood-vessels. His feverish literary career gives the lie to the assumed placidity and uneventfulness of the 'forties and 'fifties. Thackeray died at the age of 52, after foreseeing his end for a long time. Surtees, the creator of "Jorrocks," died of angina pectoris at the age of 61. He had apparently had no warning of this. Whyte Melville was killed in the hunting field at the age of 57, and he does not therefore come within our purview, but Frank Smedley, author of "Frank Fairleigh" and other stirring romances, was a typical invalid author, who made up to himself for his limitations in the matter of health by the vividness of the adventures he described. In this he resembled R. L. Stevenson, the consumptive creator of "Treasure Island." Smedley was laid up from early youth by an affection of a paralytic nature, which gradually deprived him of the use of his legs and brought on what was then diagnosed as "irritation of the brain." He wrote against his doctor's orders, overworked, and died at the age of 45, passing at the last through a series of epileptic fits. G. P. R. James died a complete wreck, mental and physical, at the age of 59. At the same age died Sheridan Le Fanu. The death of Charles Dickens was self-induced, for he insisted on giving his recitations long after he had been warned against every kind of activity. His medical attendant and friend, Carr Beard, could only sit by and report on the degrees of excitement reached by the ultra-dramatic reciter.

TREATMENT OF INTERSTITIAL KERATITIS.

UP till now there are few ophthalmologists who have displayed any enthusiasm for the treatment of interstial keratitis by salvarsan or its allied compounds. According to most of the prevailing authorities, anti-syphilitic treatment has very little effect. "Unfortunately," says Fuchs, "we must say that in many cases, parenchymatous keratitis, even under the most careful treatment, runs a course that is not essentially different from what would have been the case without any treatment at all." Foster Moore records his conviction that neither mercury nor any of the salvarsan compounds will prevent the onset of interstitial keratitis or the other eye symptoms of congenital syphilis; it is hardly to be expected, then, he says, that they will bring about a cure when the disease is established.[1] On the other hand, de Schweinitz believes that treatment by the salvarsan compounds is most valuable. "Although it does not materially hasten the absorption of the corneal deposits it definitely shortens the duration of the disease."[2] This more hopeful opinion has recently received support from Mr. R. Lindsay Rea, who claims that the end-results of cases treated with injections of novarsenobillon are very decidedly better than if not so treated.[3]

A systematic investigation of the question has been undertaken by Dr. Maud Carvill and Dr. George S. Derby at the Massachusetts Eye and Ear Infirmary.[4] Previous to 1910 the general treatment of interstitial keratitis was carried out at this institution in a more or less desultory fashion. Since 1910 anti-syphilitic treatment has been systematically carried out for all these patients—viz., numerous injections of arsphenamin or allied preparations, mercurials by injection, inunction, and by the mouth, in addition to iodides when indicated. For purposes of comparison 100 of the "untreated" cases were collected and 100 of the "treated" cases and the results tabulated. In the case of the former group the average period that had elapsed since the cessation of acute symptoms was nine and three-quarter years. In the case of the latter, two and three-quarter years. Except for the shorter period of observation of these "treated" cases the comparison seems a fair one. The result is decidedly in favour of treatment. At the most recent examination vision of 20/30 or better was found in 58 per cent. of the treated cases, and in only 28 per cent. of the untreated. In the treated cases only 15 out of 178 eyes had a vision of less than 20/100. One eye had only perception of light. In the untreated, 45 eyes out of 179 had a vision of less than 20/100. Five eyes had light perception only, and in five vision was nil. In spite of the possible fallacy involved in the different period of observation in the two groups these figures cannot be ignored. Another comparison of the number of cases in which recurrences occurred is even more striking, as in this the difference in period of observation was eliminated. In the untreated cases during the first three years recurrences took place in 24 eyes (13 per cent.), as compared with 3·6 per cent. among the treated cases. In the light of these recent observations on both sides of the Atlantic it seems desirable that ophthalmic surgeons should turn their attention to this subject which is of considerable importance. The incidence of the disease is about 0·5 per cent. of the total number of

[1] Medical Ophthalmology, p. 193.
[2] Diseases of the Eye, tenth ed., p. 303.
[3] THE LANCET, August 22nd, 1925.
[4] Boston Medical and Surgical Journal, August 27th, 1925.

patients at most ophthalmic hospitals, and children blind from it are by no means unknown in the blind schools.

APT PATIENTS.

OUR Vienna correspondent informs us of an interesting experiment that has been carried out at Prof. Pirquet's Children's Clinic in that city. When insulin was discovered some three years ago Prof. Pirquet began the treatment of 30 diabetic children by this means, the cost of which was met by grants from the union of the Vienna "sick clubs" (*Krankenkassen*). Insulin at that time was very expensive, and, in addition to the actual cost of the drug, the unfortunate sufferers appeared doomed to pay medical fees throughout their lives for the minor operation of having the medicament injected subcutaneously. Prof. Pirquet, therefore, attempted the daring innovation of teaching these children to inject themselves. A regular course of instruction was instituted, and the children were taught the principles of sterilisation, how to handle a syringe, how to make an injection, and further, they learned the dietetic values of the various foods suitable for their condition. The older children were taught how to cook their own food. Later on the course was extended to include the relations of diebetic children, and full instruction was given on all points relating to the treatment of the disease, including urine tests. The experiment proved successful, and in a short time it was possible to allow all the children to return to their homes, with the exception of a few serious cases. The children are examined medically every few weeks for control of weight and urine, otherwise they are free from the shadow of hospitalisation. A similar experiment is now being made with cases of myxœdema. This experiment, apart from the happy results it has achieved in individual cases, is of importance in showing how the hospital can be used as a teaching centre for patients as well as students.

THE ERECT POSTURE AND ITS DRAWBACKS.

WHEN by standing upright on our feet we gained our predominance over animals which crouch or crawl, we brought on ourselves by way of payment a host of troubles of which we seem to have reached only the beginning. Dr. René Lambolez, in a recent article in a French medical journal,[1] has described some of them, and as a mathematician has gone very deeply into the dynamics of the erect position, far more deeply than most readers will follow. In addition to those handicaps of abdominal and circulatory trouble that are familiar results of bipedal progress, he deals with curvature of the spine and malformation of the hips, discussing especially scoliosis. Monod wrote in a thesis in 1909 that "it is not the exigencies of study that make a scoliotic, but the fact that [the child] attends school during the years when he is exceptionally liable to scoliosis," and Dr. Lambolez points out that if there is a tendency to deformity in a child, prolonged and constantly repeated harmful attitudes will produce it. The especial importance of the vertical position is in those scolioses that result from asymmetry of the fifth lumbar vertebra, or the so-called "static" forms that are due to an inequality in the length of the legs, malformed hip, or a unilateral flat-foot. The term covers, of course, a vast number of malformations due to different causes, and their treatment can be neither exclusively medical nor exclusively orthopædic. True scoliosis of bony origin benefits immensely in its early stages from rest in a recumbent position; later on the deviation from the vertical may have to be compensated by appliances. Pott's disease, before deformity appears and while it is still in the stage of functional impotence, is also best treated by compiete rest and relieving the vertebræ from the strain of the upright position. Dr. Lambolez quotes Prof. Calot as authority for his statement that minor malformations of the hip-joint are at the bottom of half the ailments wrongly diagnosed as coxalgia, three-quarters of those diagnosed as tuberculosis of the neck, and nine-tenths of those that pass as localised rheumatism or dry arthritis, and he also maintains that all the coxa plana cases observed by Waldenstrom and all the "osteochondritis" of Perthes can be traced to slight defects in the hip-joint alone. Another unfamiliar suggestion in his article is the treatment of obesity by continuous lying down. The recumbent position facilitates the action of the heart and helps urination, so that the watery accumulations, which, as much as fat, cause this condition, are gradually eliminated from the body. Dr. Lambolez's article will stimulate many who do not agree with him.

[1] Considérations sur la Station Verticale et ses Conséquences. By Dr. René Lambolez, Faculté de Médecine of Nancy. La Vie Médicale, August 28th, 1925.

MEDICAL STUDY IN SWITZERLAND.

SWITZERLAND affords opportunities for post-graduate study which are perhaps not as well known as they might be. There are seven Cantonal or State universities, five of which have a Faculty of Medicine and grant the M.D. degree, the language of instruction being French at Lausanne and Geneva, and German at Bâle, Bern, and Zürich. Bern and Lausanne, in particular, welcome British students, and their regulations are accommodative. The University of Bern has some 65 professors in the Faculty of Medicine, including dentistry, and the number of regular students is about 1600, with 300 *auditeurs*; the University of Lausanne has some 35 professors in the Faculty of Medicine, and about 800 students and 200 *auditeurs*. The choice is governed chiefly by considerations of language and climate. Bern has many attractions as an international centre and its hospital buildings are pleasantly grouped in a sort of garden suburb. Lausanne is situated high up overlooking the Lake of Geneva. The Cantonal Hospital is divided into two main sections, the general hospital (medical and surgical) situated in the Avenue du Buglon containing some 500 beds, and the new maternity and children's blocks, built in 1916, across the road, containing an additional 200 beds each, the whole in design, construction, and equipment being probably unsurpassed elsewhere.

British practitioners are received upon the same footing as the Swiss holding the Swiss Federal Diploma, and can obtain the M.D. degree on complying with the following regulations:—

(I. (*a*)) Matriculation in the University and registration as a student, on production of a matriculation certificate of any British University, or of any preliminary examination recognised by the G.M.C. for the purposes of registering as a medical student; (*b*) Production of the certificate of the degree or diploma qualifying for practice in the U.K. and the certificate of registration as a medical practitioner in the U.K. (II.) Undergoing with success a colloquium—i.e., a viva-voce examination—in any three of the subjects of the final medical examination, at the choice of the candidate—e.g., medicine, surgery, diseases of children, or midwifery. (III.) The presentation of a thesis for the doctorate, which has been prepared and completed in the clinic under the direction of one of the professors of the Faculty of Medicine, in any subject in the medical curriculum.

Most of the professors speak English fluently, and the choice of the subject for the thesis may be made by the candidate and approved by the professor, or may be made by the professor himself. The standard, though high, is within the reach of steady work during the required semester of residence (October–March). After the thesis has been accepted by the Faculty of Medicine, its printing is authorised by the Dean, and 200 copies have to be handed in. The fees are roughly as follows On matriculation, Fr.20; on inscription for the colloquium, usually half-way through the semester, Fr.50; on presentation of thesis, Fr.200; diploma and graduation, Fr.25; courses, lectures, library, and laboratory fees, about Fr.80; printing of thesis, about £7 to £12. It is possible to live comfortably for £10 per month. The calendar and regulations can be obtained from the secretary of the university, and application for admission should

be made to the Dean of the Faculty of Medicine, and to the professor in the subject in which the candidate wishes to do his thesis. The Student's Guide is issued in October and April (Guide de l'Etudiant), and may be obtained for 50 cents from F. Haeshel-Dufey, 3 Rue Centrale, Lausanne, or from the Office Central Universitaire, Bern.

The Academic Diploma of M.D., which has so far been considered, does not confer the right to practise in Switzerland, which requires the possession of the State or Federal Diploma. Examinations for this diploma are conducted by a board of examiners drawn from all the universities. The Swiss students, after matriculating in one of the universities, pursue a five years' course of study, and take the first, second, and final examinations of the Federal Diploma. When this has been obtained they become *médecins fédérals*, and are entitled to practise in Switzerland. A year or two later they proceed to the M.D. degree of their Alma Mater, the Federal Diploma thus corresponding to our M.B. degree. It is not made easy for foreigners to acquire the right to practise in Switzerland, in view of the large number of Swiss qualified medical men and women and the comparative cheapness of higher education in Switzerland. It is obligatory to matriculate and to pass all the qualifying examinations, and even when this is done the diploma is not assured. Every canton, however, has the right to license practice within its own borders.

THE MENTAL PATIENT'S CHANCE OF RECOVERY.

THERE is no doubt that the average practitioner, and still more the layman, holds the gloomiest views on the chances of a patient with mental disease. The last thing the relatives will do for such a patient is to put him under proper treatment, and the general practitioner, when called in, will often give him up at a glance as incurable. The attitude seems to be that mental patients simply go from bad to worse, and even if they appear to be cured they always break down again afterwards, so that the psychiatrist hardly ever sees a mental case until it has reached an advanced stage.

The way out of this undesirable situation is for the psychiatrist to persuade the practitioner and public by unimpeachable argument, first, that a mental patient has as good a chance of recovering as a medical or surgical one, and secondly, that like the latter, his chance will be considerably improved if he is treated in good time. It is therefore encouraging to read in the *Journal of the American Medical Association* a lecture by Dr. Earl D. Bond, of the Pennsylvania Hospital, in which he analyses 1054 consecutive admissions, including all the graver forms of mental disease, whose history has been followed for at least five years starting from the date of admission. Thirty were lost, and the percentages of the remaining 1024 are as follows: Recovered and stayed well, 26·7; improved, 14·5; died, 32·3; unimproved, 25·5. He remarks that some of the recovered patients attained a higher level of health than they had been able to reach before their illness, and quotes some very striking individual cases who recovered completely from persecutory delusions, hallucinations, paranoia, and melancholia. No patient is counted as recovered who has relapsed at any time since discharge, and the "improved" are generally hard workers who, although they suffer from occasional relapses, are able to earn their living. The deaths are heavy, as is natural over such a long period in a group that includes many elderly people. Influenza in 1918 accounted for several, and many other causes of death were not related to the psychoses in any way. All the patients with senile and arteriosclerotic psychoses, however, died during the observation period. The failures are dementia præcox cases and manic-depressive psychotics with prolonged or frequent attacks.

On the physical and surgical side of medicine there are plenty of statistics about particular diseases, but hardly any of consecutive patients irrespective of what they suffer from. In Dr. Bond's opinion the surgeon or physician would be satisfied with a full return to function in 25 per cent. of his consecutive cases, judged from five to ten years after the beginning of treatment. Whether this is a good estimate or not, Dr. Bond's own results give him the right to challenge the general practitioner to revise his prognosis of the average mental disorder. More statistics of this kind are wanted, and other psychiatrists might well follow Dr. Bond's example. Incidentally, he made out a very good case for holding up the diagnosis of dementia præcox until a long time of observation has elapsed. This disease is incurable, but its symptoms are frequently counterfeited by other and curable diseases, and many cases prematurely diagnosed as dementia præcox have recovered. Their chances are naturally much better if judgment is reserved, and the psychiatrist should wait a very long time before he decides to abandon them as hopeless.

STICKING-PLASTER DERMATITIS.

IN the course of a year the medical profession uses many miles of sticking-plaster on patients of all ages and conditions. It is therefore disconcerting to read an article by Dr. H. W. Siemens in the Munich Medical Weekly of August 7th, in which he states that 1 per cent. of persons have an idiosyncrasy that makes the homely sticking-plaster an enemy. Rashes, blisters, eczemas appear from its use that may last a month and give severe trouble. The offending substance is "dammar" resin, that comes from the sap of one of the evergreens and is the favourite mucilage of plaster manufacturers. The irritation is not an acid one, for the resin acids have been proved harmless when tried by themselves. Dr. Siemens found three cases of individual susceptibility in the Munich University Skin and General Clinic, and tested them with dammar resin, dammar-oleic acids, pine resin, colophonium, and a brand of plaster called Helfoplast that contains no resin. The dammar, introduced into the upper arm by scarification, produced an erythema after 24 hours that was still more marked after 48. He tested his first two subjects again after three and a half and four months; the first showed less tendency to react and the second much more. The third case was the most interesting, a college student, male, 24 years old. A strip of plaster over a cut on the left forearm had brought out a severe bullous dermatitis, and tests with various resins and their derivatives, repeated after three weeks, showed a slight reaction to dammar resin and plaster and none to other substances. On the third day of the later test two large strips of plaster were applied to the right upper and fore-arm. They gave a positive reaction at the place of application after two days, and an outbreak of papulous eczema round the original wound and the sites of the earlier test. After 12 days the erythematous patches round the plaster were not very severe, but the reaction on the earlier sites was intensely irritable. The nodules were thickly and widely scattered and had been decapitated by scratching, healing with a serous scab. The reaction on the site of the old tests was less than that on the original wound. Dr. Siemens finds that this idiosyncrasy is not related to eczema liability, nor especially found in eczematous subjects. It would be interesting to know if any parallel results are forthcoming in this country. The subject should certainly be investigated further, since if the 1 per cent. incidence that Bloch demonstrated is uniform, many cases must occur that are not traced to their real cause. Dr. Siemens is still doubtful about the exact nature of this idiosyncrasy, and the fluctuations which he demonstrated in his first and second cases warn us against accepting it immediately as constitutional. The experiments remind us that skin disease as a whole is an obscure subject.

HEALTH OF THE U.S.A. IN 1925.

IN spite of distressingly hot weather in June the health record of the United States has been good so far this year. According to a preliminary report by Surgeon-General Cumming, of the U.S. Public Health Service, most of the commoner communicable diseases have been less destructive to life and health than usual. The death-rate for June was considerably higher than the average for that month owing, in Dr. Cumming's opinion, to the heat waves which then prevailed over a large part of the United States. During July and August the States which report regularly to the U.S. Public Health Service have recorded approximately 6400 cases of diphtheria. Last year for the corresponding period these same States reported nearly 8100 cases, this year's figures showing a decrease for the period of 20 per cent. In the same period measles has indicated a decrease of 27 per cent., while scarlet fever has decreased 14 per cent. On the other hand, there has been a definite increase in poliomyelitis. During the spring and summer months the prevalence of this disease usually increases, but this year 32 States reported 1463 cases of poliomyelitis for eight summer weeks, as against 635 for the corresponding period last year. This increase was particularly noticeable in California, Minnesota, Missouri, New Jersey, North Dakota, South Carolina, and Wisconsin. Typhoid, too, has increased. Decreasing for many years, the general death-rate per 100,000 population in the registration area fell from 35·9 in 1900 to 6·8 in 1923. Since July, however, 33 States have reported 7173 cases, which may be compared with 5013 cases last year, an increase of 43 per cent. Some of this increase may, of course, be due to more accurate and complete reporting of cases. The ports of Oakland and San Pedro, Cal., and New Orleans, La., have been declared free from plague, and outgoing quarantine measures have been discontinued. The Mexican authorities, upon information tendered by the U.S. Public Health Service, have agreed to the discontinuance of the disinfection of mails from Los Angeles, and also to the suspension of the fumigation of freight trains from that city, except in cases in which the Public Health Service deem this measure necessary. Because of the absence of yellow fever from Mexican, Central and South American ports, and the very low incidence of this disease, even in countries in which it is present, there has been no close quarantine this year on account of yellow fever, which means, of course, that there has been no detention of passengers. Dr. Cumming expresses the hope that the authorities of those countries in which yellow fever infection still persists will continue the work of mosquito extermination until quarantine measures will no longer be needed.

Sir Frederick Mott will deliver the Harveian Oration before the Royal College of Physicians of London, Pall Mall East, on Monday, Oct. 19th, at 4 P.M.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—During October, November, and December a series of lectures on Tuberculosis will be delivered in the Lecture Room of the Medical Society of London, 11, Chandos-street, at 5.30 P.M. The opening lecture will be given by Dr. L. S. Burrell on "Tuberculosis from the Physician's Viewpoint." All members of the medical profession will be welcome. A two weeks' combined course in Diseases of Children will be given from Oct. 12th, in which the Paddington Green Children's Hospital, Victoria Hospital, and the Children's Clinic will participate. There will be morning and afternoon sessions. At St. Peter's Hospital a four weeks' course in Urology will be held from Oct. 19th to Nov. 14th. From Oct. 26th to Nov. 20th the St. John's Hospital will hold a special course in Dermatology comprising pathology, clinical instruction, and lectures. There will be a two weeks' intensive course in Medicine, Surgery, and the Special Departments at the Royal Northern Hospital from Oct. 26th to Nov. 7th. Application for copies of the syllabuses, as also the Fellowship general programme, should be made to the Secretary at 1, Wimpole-street, London, W. 1.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CLXII.—TREATMENT OF POST-OPERATIVE PULMONARY COMPLICATIONS.

WHEN abnormal physical signs are detected in the lungs soon after an operation it is usually taken for granted that a post-operative complication has occurred, and usually the anæsthetic is blamed for the so-called "pneumonia" or "broncho-pneumonia." But a careful examination of the lungs in a large proportion of acute abdominal cases will reveal definite abnormal physical signs before operation. Unless these are detected, it is difficult to appreciate the significance of any pulmonary change that may be found after operation, especially as very similar signs may result from a purely post-operative condition. Briefly, these signs (which are nearly always confined to the right lung) are increase of size in the right half of the chest, raising of the liver dullness in the nipple line to the fifth rib or fourth space, impairment of percussion note, and diminution of breath-sounds (which are never definitely bronchial) over the base of the right lung, especially at a point 1½ in. below and to the left of the angle of the scapula; the apex beat is in the normal situation. By means of X ray screening the right half of the diaphragm is seen to be raised and its range of movement limited, though what movement there is appears to be an active one. These signs are always present and occur at a very early stage when there is inflammation of the peritoneum in the upper abdomen, but with diminishing frequency as the inflammation is situated further from the diaphragm. They are constantly present in retro-cæcal appendicitis and when suppurative peritonitis is spreading up from the pelvis, and occur in cholecystitis and perinephritis; but they are absent in pyelitis, cholelithiasis unaccompanied by cholecystitis, all forms of colic, tuberculous peritonitis, salpingitis, unless there is a spreading peritonitis, in appendicitis confined to the pelvis, and in pneumonia or diaphragmatic pleurisy. The measurement of the chest is conveniently taken with a saddle-tape measure placed just below the nipples in males and below the breasts in females. The difference is often as much as 1½ in., but an increase of only ½ in. may be regarded as pathological. Obvious fallacies are spinal curvature or old lung disease.

The explanation of these signs is not difficult; just as impaired movement of the anterior abdominal wall is an early sign of peritonitis, so is impaired action of the diaphragm. The latter is not inactive, but its excursion is limited, and what movement remains is apparently able to aerate the lung sufficiently to prevent any great degree of collapse. The liver rises in consequence of the partial collapse of the lung, and by its shape causes an enlargement of the right side of the chest. The treatment is, of course, mainly surgical, but after operation the patient should be encouraged to breathe deeply, and not allowed to remain too long in one position, as there is danger of hypostatic congestion. For the same reason he should be placed in Fowler's position, to avoid as far as possible the pressure of the liver against the diaphragm. Expectorants also help to avoid congestion of the lung base.

POST-OPERATIVE MASSIVE LOBAR COLLAPSE.

There are two forms of this condition: (*a*) collapse with contraction, and (*b*) collapse with enlargement of the corresponding side of the chest wall.

(*a*) *Collapse with Contraction.*—The first symptom is usually sudden pain low down in one side of the chest (usually the right); the temperature rises (102° or 103° F.); respiration quickens and there is some distress which may be acute; after a few hours

expectoration of white viscid sputum begins. The physical signs are impaired movement of the affected side of the chest and upper quadrant of the abdominal wall, impaired percussion note, at first diminution or absence of breath-sounds over the lower lobe of the lung, and later well-marked tubular breathing; displacement of the heart towards the affected side, diminution in girth of this side of the chest, inactivity of the diaphragm and upward displacement of the liver, if the collapse is on the right side, or heart, if on the left. The liver dullness may begin as high as the fourth rib, and this upward displacement is a most valuable sign, easy to demonstrate, and constantly present. On screening I have always found the cupola of the diaphragm raised on the side of the collapse and the movement either absent or much restrained, so that the excursion is small and jerky, suggesting tonic contraction.

Differentiation from Pneumonia.

Massive collapse is easily distinguished from post-operative pneumonia by the displacement of the heart and liver, the decrease in size of the affected half of the chest, the viscid white sputum which is never blood-stained or rusty, and the termination which may be as sudden as the crisis of lobar pneumonia, but followed by a much more rapid return of the normal signs of a healthy lung. There is no flush and the skin is usually moist, and has not the hot, dry feeling so often present in pneumonia. The change usually occurs on the third day after the onset of the collapse; the temperature drops to normal or thereabouts, the pain disappears, and the only remaining symptom is the coughing up of the characteristic sputum for another few days. At the same time the diaphragm begins to move in normal fashion.

In certain cases the change is dramatic in its suddenness, which suggests a mechanical cause rather than a pathological change in the lung tissue. The apparent tonic contraction of the diaphragm and the sudden onset closely resemble an attack of asthma, in which condition we also find a rigid (though not raised) diaphragm, which immediately begins to move on cessation of the attack. The similarity has led me to try drugs used to alleviate asthma, and I have found injections of 5 minims of a 1:1000 solution of adrenalin the most useful remedy, not only for the treatment of massive collapse, but when given as a prophylactic it seems to lessen the chances of this complication ensuing. It is better to give 5 minims repeatedly than to give larger doses at longer intervals. A second dose may be usefully given in half an hour's time. As a prophylactic 5 minims may be given every six hours for the first 48 hours after operation. Other drugs which are helpful are injections of ½ c.cm. of pituitary extract, or ½ gr. of emetine hydrochloride. In addition, small doses of potassium iodide and ammonium carbonate with a few minims of ipecacuanha wine made into a mixture with camphor water, help to liquefy the viscid sputum and so assist its expectoration. Many patients have benefited from the application of a mustard leaf to the side of the neck, which was done with the idea of providing counter-irritation to the phrenic nerve, and with a similar object I have found it of some use to pass a descending constant current down the side of the neck. This form of massive collapse is an alarming complication, but unless pneumonia supervenes (and this happens but rarely) is never by itself fatal.

(*b*) *Collapse with Enlargement of the Chest Wall.*—In massive collapse with enlargement of the affected side there are several points of difference. The onset is painless and gradual; dyspnœa is not marked; the heart and liver are displaced in a similar way, and though the heart is never drawn over so far, the upward displacement of the liver is extreme. When screened the diaphragm can be seen considerably raised, moving very slightly and apparently passively on the affected side, as if paralysed and relaxed. The breath-sounds are feeble, the percussion note is considerably impaired, and bronchial breathing is never as marked or extensive as in the cases associated with contraction of the chest. This is a much more serious complication than that already described and indicates a spread of infection up to the diaphragm and consequent risk of general peritonitis or subphrenic abscess. Treatment is mainly surgical, as there is need of free drainage. Drugs are of little use and adrenalin has no effect. Some cases recover with merely expectant treatment, for the peritoneum can deal successfully with infective organisms in very great measure.

The treatment of any condition involves consideration of the cause. It has been shown that the position and action of the diaphragm are modified in both kinds of post-operative collapse and in the cases which show pre-operative pulmonary signs. The diaphragm is just as much a part of the muscular wall of the abdominal cavity as the rectus abdominis and oblique muscles, and is affected by inflammation beneath it just as are the muscles overlying an inflamed appendix.

That infection greatly modifies diaphragmatic action is clear from a study of 39 cases in which one or other form of collapse of the lung followed operation. (1) Many needed subsequent drainage after the wound had been sewn up, or the wound was found to be suppurating when the stitches were taken out. (2) The more distant the focus of infection, the less likely was the diaphragm to be involved, and inflammation confined to the pelvis never affected it. (3) Subphrenic abscess invariably paralysed the diaphragm. Subsidiary causes of collapse are very large incisions, especially if they extend into the hypochondrium, and rough handling of the sides of the wound at the operation, so injuring the muscles and causing an alteration in the tone of the opposing muscle—i.e., the diaphragm.

A slight stimulation of a muscle causes it to contract, but a severe one removes the power of contraction, which accounts for the two forms of collapse. When the chest is contracted, the infection or stimulus appears to be slight; manifest suppuration seldom ensues and drug treatment is of great use. Where the side of the chest is enlarged, drugs are of little avail and subsequent drainage of the wound, or possibly of a subphrenic abscess, is usually necessary.

Subphrenic abscess is a further complication which may be mentioned. Measurement almost invariably shows the affected side of the chest to be larger than the other, and if the heart has been originally drawn over and the signs of collapse of the lung persist or increase, any movement of the apex beat towards or beyond its original situation indicates the presence of a subphrenic abscess or an abscess in the upper part of the liver. The treatment, of course, is purely surgical. The outstanding feature of post-operative massive collapse is its relation to interference with the peritoneum. The length of operation and the kind of anæsthetic employed appear to have no effect of this sort.

Pneumonia and Bronchitis.

Lobar pneumonia following operation is uncommon, and its treatment in no way differs from that of the ordinary attack. I should like to urge the value of intravenous injection of strophanthin, gr. 1/100, in cases of failing heart with low blood pressure, always remembering that any severe grade of cyanosis must be relieved by preliminary venesection.

Bronchitis, which may progress to broncho-pneumonia, is best relieved by injections of atropine, gr. 1/100, or tincture of belladonna in moderate doses, if the sputum is fluid and excessive; if it is scanty and viscid, antimony wine in 20 minim doses with 15 minims of tincture of stramonium is often very useful. A little bronchitis may be unavoidable after long administration of ether, and possibly contributes to any collapse that may be present, but it never seems to be the sole cause.

GEOFFREY EDEN, M.D. Camb., M.R.C.P. Lond.,
Assistant Physician, Queen's Hospital, Birmingham; Senior Physician to Out-patients, Birmingham and Midland Hospital for Nervous Diseases.

Special Articles.

THE CENTENARY OF THE DISCOVERY OF BRIGHT'S DISEASE.

BY SIR WILLIAM HALE-WHITE, K.B.E., M.D. LOND.,
CONSULTING PHYSICIAN TO GUY'S HOSPITAL.

ON Oct. 12th, 1825, there was admitted into Guy's Hospital, under the care of Dr. Bright, one John King, an intemperate sailor, suffering from general œdema, scanty urine, and pain in the loins. He had hæmaturia but this passed away, and the urine, when clear, coagulated if heated; the pulse was hard. The sectio cadaveris revealed acute pericarditis, œdema of the lungs, pleural effusion, a large heart, and ascites. In Bright's own words:—

"The kidneys were completely granulated throughout; externally the surface rough and uneven; internally all traces of natural organisation nearly gone, except in the tubal parts. . . . This is a well-marked example of a granulated condition of the kidneys connected with the secretion of a coagulable urine."

He inclines to the opinion that the "disease of the kidney was the first established." He considers that neither the disease of the lungs, pleura, nor heart was the primary condition, nor was there any disease of the liver to explain the ascites. He points out that pain in the loins is a symptom of renal disease, and that

"the tendency to inflammatory affection in this man was a striking feature in his case and appears to me connected immediately with the condition of the kidneys."

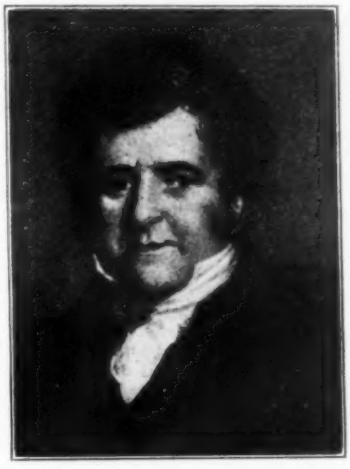
THE LANCET of Dec. 25th, 1858, writing of Bright's death, said:—

"The sudden and unexpected demise of Dr. Bright has created a deep impression of grief and regret such as only a sense of irretrievable loss could occasion. In him all felt that the medical profession of England had lost one of the most original, observant, and philosophic minds. A man of peculiar independence of thought, of high morale, and untiring energy, he contributed more, perhaps, than any other to form the medical opinion of his day . . . By the singular devotion to pathological investigation which characterised his career, he was at once enabled to accomplish investigations which have immortalised his name."

It is fitting, therefore, that the centenary of the commencement of the investigations on the disease, bearing the name of one better known throughout the civilised world than any British physician since Harvey, should be signalised by some account of Richard Bright and his work.

Biographical Account.

He, the third son of Richard Bright the elder, of Ham Green, Somerset, was born at Bristol on Sept. 28th, 1789. In 1808 he began to study medicine at Edinburgh; in 1810 he accompanied Sir George Mackenzie to Iceland, and he wrote the botanical and zoological parts of Mackenzie's "Travels in Iceland" and drew some of the illustrations. On his return he entered at Guy's Hospital, and, in 1811, read a paper before the Geological Society. In September, 1812, he graduated M.D. at Edinburgh with a thesis on erysipelas, about which he had previously read a paper at the Medico-Chirurgical Society. He spent two terms at Peterhouse, Cambridge, returned to medicine in London, and in 1814 went on a tour through Holland, Belgium, Berlin, Vienna, Austria, and Hungary. He observed and studied everything he came across, medical or otherwise, and in 1818 published "Travels from Vienna through Lower Hungary, with some Remarks on the State of Vienna during the Congress in the Year 1814." The book, a well-printed quarto of over 700 pages, exemplifies Bright's wonderful power of observation and description, his wide reading, his accuracy, as shown by the tables, maps, and appendices, and his artistic ability, for it is illustrated by beautiful engravings from sketches by himself. In 1818 he again travelled in Germany, Italy, and France for nearly a year. In 1821 he became assistant physician to Guy's Hospital, in 1822 a Fellow of the Royal Society, in 1824 full physician to Guy's, and in 1832, although only a licentiate, he was with applause elected a Fellow of the Royal College of Physicians of London. He died on Dec. 16th, 1858; few of the millions that pass along Piccadilly know that there is a tablet to his memory in St. James's Church. He was a man of several interests, physician, pathologist, traveller, geologist, artist, writer, linguist, and an indefatigable worker, for many years spending six hours daily at the hospital. He was beloved by the students and his colleagues, who were invariably willing to aid him in his researches; he was always most careful to acknowledge help given, was ungrudging in his admiration of the work of others, and intensely proud of Guy's Hospital and its museum. But all this does not make a man extraordinary; but Bright was. It is impossible to place geniuses in order, but he would certainly be among the first five or six in our profession. To him was given marvellous power of observation, and his genius took him further even than brilliant seeing of facts, for he could correlate his observations and draw deductions from them.



Richd Bright

(*From Guy's Hospital Reports, January, 1921.*)

Discovery of Bright's Disease.

Bright's most remarkable publication was his renowned book "Reports of Medical Cases selected with a view of Illustrating the Symptoms and Cure of Diseases by a reference to Morbid Anatomy."[1] It is in two large volumes containing 65 beautifully coloured plates. The first appeared in 1827, the second in 1830. It shows his facility of insight, for it is entirely composed of original observations made at Guy's Hospital during the short six years he had been on the staff. In the preface he says:—

"It is my wish in thus recording a number of cases, to render the labours of a large hospital more permanently useful, by bringing together such facts as seem to throw light upon each other. . . . To connect accurate and faithful observation after death with symptoms displayed during life, must be in some degree to forward the objects of our noble art. . . . The work will not be thoroughly completed, until every disease which influences the natural structure, or originates in its derangements, has been connected with the corresponding organic lesion."

The most celebrated part of this book is the first 126 pages of Vol. I. This section is entitled "Cases Illustrative of some of the Appearances Observable on the Examination of Diseases Terminating in Dropsical Effusion." Bright reminds us that a common cause of dropsy is venous obstruction, but adds that

[1] This is now a rare book. An abstract of it and of Bright's other writings was published in Guy's Hospital Reports, vol. lxxi., January and April, 1821.

too little attention has been paid to the kidneys. Often albuminuria, which he detected by heating the urine in a spoon over a candle, is present as well as dropsy. Then the kidneys will be found diseased. He says:—

"I shall now detail a few cases . . . in which I had the opportunity of connecting the fact of the coagulation of the urine with the disorganised state of the kidneys."

Then follow the clinical notes of 23 cases to illustrate this point. Considerably more than half were fatal, a full account of the post-mortem examination is given, together with a series of coloured plates to show the diseased state of the kidneys. I have already mentioned the first, that of John King. Bright's next allusion to renal disease was in his second Goulstonian Lecture delivered in 1833. He then had

"had great assistance from the intelligent and zealous coöperation of three of my young friends and pupils, Mr. Barlow, Mr. Tweedie, and Mr. Rees."

They examined the urine of 296 patients. Bright alludes to the enlargement of the heart, the serous effusions, the headache, the coma, and the cerebral hæmorrhage found in association with disease of the kidneys and reaches this conclusion:—

"My conviction is complete as to the existence of some decided connexion between the three facts—anasarca, coagulable urine, and diseased function going on to diseased structure of the kidney."

His final and most extensive communication on the subject of nephritis appeared in *Guy's Hospital Reports* for 1836. It consists of two papers occupying 65 pages; the first is entitled "Cases and Observations Illustrative of Renal Disease accompanied with the Secretion of Albuminous Urine," the second, "Tabular View of the Morbid Appearances occurring in One Hundred Cases in Connexion with Albuminous Urine."

He gives the history of a sufferer from the form of renal disease under consideration thus: the patient may in the past have had scarlatina; early symptoms are polyuria, hæmaturia, and œdema of the face or ankles; if, at this stage, the urine is tested, albuminuria is found. Next he notes that the pulse is full and hard, the skin is pale and dry, the patient complains of headache, pain across the loins, vomiting, and disturbance of sleep owing to frequent micturition. A sense of lassitude, of weariness, and of depression steals over the bodily and mental frame. The blood is found to contain urea. The disease progresses, the œdema may increase, the lungs become œdematous, the headaches are more frequent, the stomach is deranged, the vision indistinct, and blindness may supervene. Finally, the patient dies from asphyxia due to œdema of the lungs, or of the glottis, or in coma or convulsions, or from acute pericarditis or peritonitis. Bright is not hopeful of treatment unless the case is seen in its early stages, but he advises diaphoretics, as antimonial powders, compound ipecacuanha powder, ammonium acetate, and warmth such as a hot bath; bleeding is of little use, cupping the nape of the neck will relieve the headache, leeches to the loins will assuage the pain there; acupuncture will diminish œdema, but we must be careful not to set up inflammation; the only diuretic that may be used is digitalis; elaterium is a suitable purge; milk is one of the best aliments; every precaution must be taken to avoid chill, flannel should be worn, and a warm climate is desirable. I have given a mere abstract of what he wrote, but even that is enough to show that Bright's description is a masterly exposition of the symptoms and treatment of what was then a new disease. The post-mortem appearances of the kidneys are carefully described; it is noted that acute pleurisy, pericarditis, and peritonitis may be found, or the pleural, pericardial, and peritoneal cavities may contain serous fluid; the heart may be hypertrophied, but otherwise healthy; œdema and bronchitis of the lungs are common; sometimes the intestines have been irritated; occasionally they are ulcerated and cerebral hæmorrhage is observed in some instances. Bright, with the inspiration of genius, arrives at the conclusion that the primary cause for all these symptoms and post-mortem appearances is disease of the kidneys.

Assuredly this is one of the most astonishing series of papers in medical literature. A disease, which presents symptoms of derangement of almost every organ in the body, is unerringly ascribed to the kidney. We are shown how to diagnose it. The description of its causes, its symptoms, its treatment, and its post-mortem appearances is so complete and accurate that after nearly a century no error has been detected and, if we except a few facts that have been gleaned by instruments Bright did not possess, nothing of importance has been added.

His enthusiasm for the study of renal diseases continued. With the hearty coöperation of his colleagues, two wards were, from May to October, 1842, set apart for renal cases only, which were all under his care. A small laboratory "was fitted up and decorated entirely to our purpose." This, Bright says, is—

"the first experiment which, as far as I know, has yet been made in this country to turn the ample resources of a hospital to the investigation of a particular disease by bringing patients labouring under it into one ward properly arranged for observation."

The results of this experiment were published, by Barlow and Rees, in *Guy's Hospital Reports* for 1843, and they confirmed the previous investigations.

Other Medical Observations.

Bright's work on renal disease has attracted so much attention that too little has been paid to his other observations, many of which were original. His power of seeing was extraordinary; little escaped him, he never saw what was not there, not a single one of his observations has been shown to be incorrect; his accuracy and truthfulness are wonderful; no preconceived idea ever tints his descriptions; his industry was unflagging; he willingly goes into the country for the sake of a post-mortem examination. He could write well, it is a pleasure to read him; any disease he describes stands out with all its features clear, and the account he gives is true to-day.

The second volume of his "Reports of Medical Cases," with its 724 pages and 40 artistically coloured plates, is concerned with the nervous system. Bright dislikes the use of the word functional, for it is used to cloak ignorance and it retards investigation. He describes the meningitis due to disease of the ear and nose, and records that the tuberculous variety may be excited by a blow; he tells of patients, with tumours of the brain, who had spasmodic extension of the limbs and in whom the spinal cord was "remarkably firm throughout, almost like cartilage"; this, he thinks, was probably the cause of the spasticity, and to him, therefore, belongs the discovery of the morbid anatomy of secondary degeneration of the cord and spastic paraplegia. More than 40 examples of cerebral hæmorrhage are recorded, both clinically and autopsically, and their relation to renal disease is emphasised. In the section on epilepsy, epileptic mania and somnambulism are depicted; Bright was insistent that certain epileptic seizures, or, as we should now call them, attacks of Jacksonian epilepsy, are due to organic disease damaging the surface of the brain; and further, that in these and in other cases of nervous disease, study of the symptoms will enable us to foretell the position of the causative lesion. In illustration of this he tells us that he saw a man suffering from fits on the right side; because of this he was of opinion that there was disease on the surface of the left brain, which proved to be correct. Aphasia is singularly well described. He was, indeed, the pioneer in the doctrine of cerebral localisation.

He did much to make known the association between chorea and rheumatic fever. Probably he was the first to tell us that a mitral murmur and also pericarditis may accompany chorea.

Bright published a series of papers in *Guy's Hospital Reports* on Abdominal Tumours and these were reprinted as a separate book; 117 cases are reported and form classical clinical lectures. How much of

the matter in them is original we cannot say, for we do not know the exact state of knowledge at the time; but with regard to 15 cases of abdominal hydatid disease we have the testimony of Barlow that—

> "It is but due to the memory of Bright to state . . . that the description of acephalocyst hydatids is altogether original, and certainly an anticipation of similar observations which have since been published in Germany."

In his paper on "Cases and Observations connected with Diseases of the Pancreas and Duodenum," Bright was the first to describe—and he did it admirably—the stools which we now know to be characteristic of disease of the pancreas, and he stated that they indicated disease of that organ. He was aware that glycosuria might occur with pancreatic disease. Another paper, "Observations on Jaundice," contains an account of jaundice and its causes. We are told how, in alcoholic cirrhosis, the liver first enlarges and then contracts, and we have the first description of acute yellow atrophy of the liver, for although Bright did not name the disorder, he accurately described its clinical symptoms and post-mortem appearances. A paper on Chronic Peritonitis contains what is probably the earliest description of chronic proliferative peritonitis; the thickened membrane, the bands, the shortened mesentery are all here.

To Bright must be given the credit of being the first to depict Addison's disease. He did not connect the disease of the adrenals with the symptoms, but he gives a life-like account of them and records that the suprarenals were greatly enlarged from a deposit of scrofulous matter. The specimen is still in the museum at Guy's Hospital.

In London, in 1839, was published Vol. I. of "Elements of the Practice of Medicine," by Richard Bright, M.D., and Thomas Addison, M.D. The second volume never appeared, and the first is a rarity; therefore, it is not generally known that it contains the earliest accurate account of the causes, symptoms, course, and post-mortem appearances of appendicitis. It is too long to quote, but everyone interested should read it; Kelly does not exaggerate when in mentioning it he says, "descriptions so clear and well presented that they could not be surpassed to-day."

Conclusion.

In this outline of Richard Bright and his work I have been compelled, for want of space, to omit much; for example, his description of phthisis, his giving of oxygen for respiratory distress, his account of a case of heart-block, and what is probably the first delineation of the broncho-pneumonia and pulmonary collapse seen in whooping-cough; but I trust I have shown that this article, written to commemorate a centenary, is justified.

A CARDIFF CONVALESCENT HOME.—Cardiff Royal Infirmary has long been in need of a convalescent home, and the lack has now been supplied by Sir William Edgar Nicholls, who has presented the infirmary with a country house known as Ty To Maen at St. Mellons, near the city, with 25 acres. The house, which is in beautiful country overlooking the Bristol Channel, will provide between 60 and 65 beds.

WELSH MENTAL DEFICIENTS.—A conference of representatives of the six counties of North Wales has recommended the preparation of a joint scheme for a new home for mental deficients. The North Wales Mental Hospital at Denbigh, which is supported by the counties of Denbigh, Flint, Carnarvon, Anglesey, and Merioneth, has long been overcrowded. Its nominal capacity is 1000 patients, but it sometimes contains 1200.

AN INSANITARY IRISH HOSPITAL.—Donegal County Council is borrowing £7000 for urgent work at the Donegal County Hospital, Lifford. It was stated at the meeting of the council that "there was danger of an attack of enteric fever in the place if some remedy were not forthcoming," and that "anyone going near the place could not help observing that there was something wrong owing to the pungent smell."

PUBLIC HEALTH ADMINISTRATION.

ADMINISTRATIVE MACHINERY IN EUROPEAN COUNTRIES.*

(*Continued from p. 719.*)

VI. HUNGARY.

HUNGARY has been reduced to an area of 36,000 square miles containing a population of about eight millions (206 persons per square mile). Various forms of government have been tried since the war; at present the country is ruled by a single chamber National Assembly based on universal suffrage and acting under a Governor who has royal rights but no legislative veto. For administrative purposes Hungary is divided into counties and each of these is in charge of a Prefect (Főispán), who is directly responsible to the Government. Each county elects a Municipal Committee, whose General Assembly may have several hundred members. The central authority of the Prefect dovetails into the autonomy of this county parliament, and there is between them an important Administrative Committee, mainly composed of high officials, under the presidency of the Prefect. The representative of the county as an autonomous unit is the Vice-Prefect (Alispán). Towns with a population of more than 50,000 (urban municipalities) correspond to counties and in these the burgomaster is the Alispán. Each county has from three to six districts, the ultimate unit being the commune, which has its own Mayor with Administrative and Representative Councils like those of the county in miniature. Small communes are sometimes grouped into cantons, and towns of over 7000 rank as districts politically.

Health Administration.

The foundation of the present system was laid in 1876 by a sanitary law designed to detect and punish nuisances; but the Ministry of Health and Social Welfare was only established in 1918. The Minister has very wide powers, and is assisted by under secretaries who deal with public health and social welfare respectively and superintend the 14 departments. Each of these is in charge of a Ministerial Councillor and they cover all the branches of health and welfare, including, for example, sanitary administration, social diseases, hygiene, health insurance, and communicable diseases. To advise the Ministry upon all special questions there is a non-executive National Public Health Council representing every branch of medicine, and there is also a Board of Forensic Medicine which assists the Ministry of Justice and advises on disciplinary or disputed points within the medical profession.

Counties (urban or rural municipalities).—The Municipal Committee (General Assembly) is responsible for organising small communes into sanitary cantons, draining marshes, the issue of emergency health regulations, and the revaccination of adults in epidemics. It also examines the credentials of practitioners and midwives, ensures that every commune has a midwife and regulates her fees, and authorises private practice by communal medical officers or makes allowances to them if their income is inadequate. Appeals against the Assembly's decisions are addressed to the Ministry. Under the law the principal lay authorities must be guided as a general rule by expert opinion. The Prefect therefore appoints, subject to the approval of the Ministry, a Chief Municipal Medical Officer in each county, and this officer and his medical subordinates form the nucleus of a Municipal Health Committee which advises and makes suggestions. The Chief Medical Officer is a member of the Prefect's Administrative Committee and acts as expert rapporteur to this and to the General Assembly. Apart from giving advice he supervises the whole health personnel and medical institu-

* Based on a Series of Reports on National Health Organisation to the Health Section of the League of Nations. Obtainable in Great Britain from Constable and Co.

tions of his county, conducts sanitary inspections, licenses doctors and midwives, undertakes investigations in police cases, and publishes statistical data. He is subject to the Prefect but in direct contact with the Ministry, to which he reports quarterly. He must visit every village at least once a year and he takes action in epidemics. Administrative power, however, rests with the Alispán (Vice-Prefect or burgomaster) on whom the actual responsibility lies for the enforcement of health regulations. It is his duty to see that dwellings are not overcrowded, that conditions in medical institutions are satisfactory, that epidemics are being met, and that sanitary inspection is made properly.

Note.—Budapest has modified health organisation.

Districts.—The lay Chief District Officer is responsible, like the Alispán, for all public health matters—e.g., the enforcement of sanitary regulations including those applying to food, the care of the indigent sick and of babies, and the ordering of autopsies. The District Medical Officer, appointed for life by the Prefect, reports on any neglect of regulations, inspects buildings, schools, medical establishments, examines food, supervises the treatment of the indigent sick and the certification of death, and conducts medico-legal autopsies. He reports quarterly to the Alispán. (In cities ranking as counties the District Medical Officer is appointed by the General Assembly, which also delegates many of his duties to other officers.)

Communes.—Health administration is the same in communes, cantons, and in towns politically ranking as districts. The chief official is the Mayor, who heads the Communal (Administrative) Council and presides over the Representative (Advisory) Council. He is responsible for drinking-water, cemeteries, inspection of food, and the care of the disabled and children. The commune pays half the expenses incurred in preventing or treating infectious disease, including hospitals, the rest being defrayed by the State. The Mayor must consult the Communal (or Town) Medical Officer, who is assisted by a Health Committee consisting of doctors, veterinary surgeons, pharmacists, ministers, &c. This Committee advises on the appointment of medical officers, hospital surgeons and midwives, and on all health matters, and can appeal to the District Medical Officer. Every commune or canton of over 5000 inhabitants has one or more medical officer. He is allowed to practise privately and advises all the authorities. He treats the indigent without fee, attends maternity cases, vaccinates, certifies deaths, supervises midwives, performs autopsies, and reports to the District Medical Officer.

Hospitals, Training and Registration.

State hospitals are under direct supervision by the Ministry. The doctors are appointed by competitive examination and the senior officers rank as civil servants. Public hospitals must conform to regulations and they are subject to the Municipal Administrative or Communal Committees. The staff is appointed, after examinations, by the Prefect in counties and by the Vice-Prefect in communes. There are also hospitals ranking as Public Utility Establishments, which are semi-private institutions recognised and subsidised by the Ministry in return for an obligation to receive certain kinds of patient. Finally, there are the private hospitals, and these are under municipal supervision.

Insurance.—All workers earning less than a fixed sum who are subject to the Industrial Law are compelled to insure themselves against sickness and accident. There is also a scheme covering civil servants. Strict laws govern *medical practice;* there is a six months' course in public health but no public health school in Hungary; health officers are generally required to have passed an examination and to have had two years of hospital experience. A diploma has also been required of *midwives* since 1921, and a ten months' course is needed before this can be taken.

Statistics are based on the reports of the officers mentioned. Registered medical practitioners, persons trained for the purpose, or failing them, the communal authorities, are entitled to certify death. Burial must take place within 60 hours, and autopsies may be conducted whenever desirable in the public interest.

VII. THE KINGDOM OF THE SERBS, CROATS, AND SLOVENES.

Jugo-Slavia was formed in 1918 from Serbia, Montenegro, and the old Austrian provinces of Croatia, Slavonia, Voyvodina, Bosnia-Herzogovina, Dalmatia, and Slovenia. The area is 87,000 square miles and there are over 12 million inhabitants (137 persons per square mile).

Health Organisation.

The Ministry of Health is the central health authority, but has much in common with the Ministry for Social Affairs, which deals with housing, with the protection of children and the infirm, and with social and workers' insurance. The Health Ministry, which has the advisory assistance of a Permanent Epidemics Commission and a Supreme Health Board, is divided into departments dealing with Administration, Health, and the Public Health Services. The Institute for Social Medicine at Belgrade is a technical branch of the Ministry which is collecting information on national and foreign health standards and methods, and is engaged in propaganda and the preparation of schemes and reforms.

The Health Department.—Until 1923 this was independent of the general administration. There were ten sanitary inspectors and there were regional medical officers in charge of each province, district, and county, who had full authority and could inflict fines for infringement of sanitary regulations. Their powers have been curtailed, and they are now responsible to the administrative (political) authorities of their regions, though they retain the right of appeal to the Health Minister.

The Health Services are autonomous technical organisations, which deal with epidemics, malaria, venereal diseases, &c. Their work is regulated by the Ministry through the new Sanitary Institute at Belgrade, which will contain central laboratories with facilities for bacteriology, training of medical officers, and research. The Institute will control the otherwise independent activities of the large provincial institutes for the study of special diseases and the whole body of local epidemiological institutes and stations. Many bacteriological stations have been established, either permanently or in the field, and these are self-contained sanitary units with a bacteriologist, nurses, and disinfecting apparatus. There are also some motor laboratories and two ambulance trains. The service at present has 150 medical officers of its own and is limited to those who have been specially trained abroad. The number is to be increased, and during epidemics other doctors are temporarily coöpted.

Training, Propaganda, and Statistics.

The kingdom has three schools of medicine. After five years' training students are attached for a year either to a hospital or to a health institution, and in this way specialism in hygiene begins at once. The course for nurses lasts two and a half years, and they, too, are attached to one or other kind of institution. *Propaganda* is regarded by the authorities as one of the most essential parts of the health organisation, and is carried on by books, pamphlets, lectures, plays, and the cinema. The Ministry of Health subsidises a paper advocating temperance and publishes an official journal. The method of collection of *statistical information* is as yet incoördinate and faulty. The duty devolves on the Ministry for Social Affairs, but centralisation is incomplete and no reports have been published for ten years. The data are mainly furnished by the priests—Orthodox, Catholic, or Moslem—who are supposed to fill in statistical forms for all births, marriages, and deaths. Helpful instructions are issued for the use of persons who have to state the cause of

death in the absence of a doctor. Still-born children are those who "have not breathed and who died before birth." Registrable information is forwarded monthly to Belgrade by the priests or the District Health Officers.

VIII. CZECHO-SLOVAKIA.

Czecho-Slovakia is a democratic Republic under an elected president, and is made up of territory from the old kingdoms of Bohemia and Hungary and from a part of Prussian Silesia. It covers 54,000 square miles, and has a population of 13,600,000 (244 persons per square mile). Under the Empire the Austrian provinces of Bohemia, Moravia, and Silesia had a measure of autonomy whilst Slovakia and Ruthenia were appanages of the Hungarian crown. The Czecho-Slovakian Government is trying to establish a uniform administration, under which the country is divided into counties (Zupàs), with an average population of 600,000, and these are subdivided into districts of 60,000. County and District Commissioners represent the Government in their areas, and there are county councils and district committees which carry on administration under their care. For financial reasons, however, this system is as yet only in force in Slovakia. Ruthenia remains a semi-independent territory governed by a local Diet, and the other provinces retain much of their previous administrative machinery, which combined with difficulty and friction the authorities of the provincial Diet and the Imperial Government.

Health Organisation.

The Ministry of Public Health and Physical Training was established in 1918, and has legal, administrative, financial, and recording divisions. The sections devoted to public health are in charge of heads of sections, or lower officials called Ministerial Councillors, and are subdivided into departments. There is an under secretary who represents the Minister, and a Central Committee which organises the work of the whole under the Minister's presidency. A State Institute of Hygiene is to be formed from the existing institutes of hygiene, serology, pharmacy, bacteriology, chemistry, and hydrology, and a large grant by the Rockefeller Foundation makes it possible to combine the practical laboratory services with hospital work and the training of medical officers of health and sanitary personnel. The Ministry of Social Welfare deals with child welfare, sickness insurance, the care of disabled soldiers, housing, and industrial inspection. It acts through committees established throughout the country according to provinces and nationality. The National Council of Social Hygiene is intended to centralise voluntary health and social work, and is a federation of benevolent organisations which includes those interested in tuberculosis, venereal disease, and maternity and infant welfare. The most powerful voluntary organisation in Czecho-Slovakia is the Red Cross, which organises campaigns against epidemics, establishes hospitals and dispensaries, and arranges courses for public health and social workers.

Local Administration.—The reorganisation of the country into counties will eventually produce in the health services a continuous chain leading from the Rural Medical Officer to the Minister of Health. But the change is far from complete and the remains of the old systems still exist with modifications. Under the Empire there were two distinct organisations, and dual control was evident in its results. First of all, there was the Imperial Service, which was represented in the province by a Provincial Health Commissioner and in the district (60,000 persons) by a District Health Officer. This administration was supposed to supervise health institutions and pharmacies, control the spread of infectious disease, arrange for vaccination, order post-mortem examinations when necessary, and perform other like functions. So much for that; but the Provincial Diet or parliament—an historical relic and a concession to nationalism—also had its health organisation. Chiefly this was concerned with the upkeep of hospitals, but it also superintended the local medical officers. The country was (and is) divided into small areas in charge of Rural Medical Officers, and towns of more than 6000 had one or more Urban Medical Officers. These officials were paid by the communes, on which fell the duty of applying health regulations, collecting particulars of cripples and the disabled, treating the indigent sick, keeping up cemeteries, and supervising infectious diseases. Their officers were also frequently required by the Imperial Service to furnish reports and make post-mortems; but they were quite independent of the State officials, who were far better paid and trained. Both were permitted to practise privately; but the local officers were often practically dependent on what they could earn in this way; which circumstances, and the fact that the district officers were looked on as representing the Imperial Government, led to disharmony and a total lack of coöperation. At present there are in Czecho-Slovakian service 334 medical officers in what was formerly the Imperial Service and about 2000 in rural and urban employment. The new constitution will combine all these in one State Service, but financially this is at present impossible on a permanent basis. To make the local officers subject to the district officers was imperative, and this has been done by enrolling all the local officers as State servants on a temporary contract with increased salary.

Hospitals and Training.

Public hospitals are maintained by the State, province, county, district, or town. Slovakia was the only province in which there were any State hospitals before the Republic was formed. Nationalisation of all hospitals has been abandoned on grounds of expense. There are two beds for every 1000 inhabitants; but unfortunately the distribution is most uneven, and in some districts more are urgently needed. Most of the so-called infirmaries are really poor-houses without medical amenities. Besides the true public hospitals there are institutions receiving that status in return for certain obligations, and there are, of course, private hospitals. In Czecho-Slovakia there are 1506 beds for pre-tuberculous children, 3264 for curable tuberculosis, and 423 for incurable tuberculosis, and in Bohemia alone there are 7108 beds for the insane (more than 1 per 1000 inhabitants). Health centres have been set up in the larger towns for the treatment of social diseases; disinfection stations exist on the frontiers, and there is an observation station in Bohemia to which people suspected of infectious disease are sent. Regular school doctors were appointed in Prague as early as 1904, and there are now 14. Their presence in other towns depends on local initiative; their salaries are paid by the provinces or districts except in the few State schools; in these they are paid by the Ministry of Health, which is the authority in school health matters.

Medical students are required to study for five and a half years, and State medical officers have been obliged to pass an examination before appointment. Two years' preliminary practice was required, and a preliminary university course of three months was usual; but now a regular course on public health at the State Institute of Hygiene is being instituted, and local medical officers also will have to pass the examination. There are schools of nursing, but to possess the diploma is very rare, and general hospital nursing is unsatisfactory. District nursing is almost unknown, and there is no school of public health nursing. Midwives must obtain a diploma before practising. The course lasts six months, and probably 95 per cent. of all births in Czecho-Slovakia are attended by midwives, though there are too few in the country districts. Their general education is very weak. There are very few trained disinfectors, and their duties are usually undertaken by night watchmen or policemen; but a school has been started in Prague, and short courses are occasionally given as demand arises.

POST-GRADUATE LECTURES AT ST. MARY'S HOSPITAL.

THE course of post-graduate lectures given over last week-end at St. Mary's Hospital was as successful as those held during the past two years, and had a very cordial reception. Eleven lectures were delivered between 11 A.M. on Saturday and 5 P.M. on Monday; they were freely open to all practitioners, and the fact that over 160 attended part or all of the course should encourage its organisers and provoke imitation of their work.

Mr. C. W. G. Bryan gave the first lecture on the management of

Common Forms of Urinary Obstruction.

Congenital narrowing of the urethral meatus is, he considers, a frequent cause of bouts of obstruction in boys and of continued intractable gleet in men, yet it is often overlooked. In retention due to stricture in adults, any given case may later need anterior urethrotomy, and disturbance by bougies must be minimal. If decongestive measures fail a 2 per cent. novocaine solution should be injected, and a No. 5 French gum elastic bougie passed. If this succeeds the stricture is dilated by four sizes; if it fails, a filiform catheter is inserted and left for 24 hours. A silver bougie is never desirable, and if the stricture is impassable the bladder should be aspirated with the smallest possible trocar, and, if need be, aspirated again after 24 hours. Persistence of retention after this indicates anterior urethrotomy; and infection, of course, forbids aspiration from the first. Strictures must be gradually stretched but never ruptured. Dilatation should not be done more than once or twice a week; an increase of two to three sizes at a session is enough; there should never be bleeding, and it is wrong to go on till there is pain or difficulty. After describing a method of permanent watertight drainage of the bladder by a special catheter inserted through a cannula, Mr. Bryan ended with a plea for cystoscopy and patience in treating ureteric calculi.

The Differential Diagnosis of Gall-stones.

Mr. S. Maynard Smith said that gall-stones must be treated before those complications arise which make them easy to diagnose. After dealing with the main complications he fully described the clinical features of the disease near its onset, emphasising the vague dyspeptic symptoms lacking periodicity and punctuality; the sensations of nausea, giddiness, and chill often noticed; the relation of discomfort to fatty foods, and the absence of relief by alkalies. Visceroptosis is more confusing than ulcers. In gall-stones there may be short acute exacerbations, unrelated to food, when the vague epigastric discomfort turns to right hypochondriac pain with transient subcostal tenderness; lying down brings no relief; a day of standing brings no exacerbation; and bile may be found in the urine. Chronic appendicitis gives tenderness over McBurney's point, not to be confused with diffuse tenderness over the lower rectus muscle due to a distended cæcum. In conclusion, Mr. Maynard Smith discussed, with illustrations, the value of X rays, and mentioned the detection of bilirubin in the blood, the examination of bile withdrawn through a duodenal tube, the estimation of blood cholesterol, and the intravenous injection of calcium tetrabromphenolphthalein to display the gall-bladder with X rays.

Speaking on

Hæmorrhagic Ovarian Cysts,

a common cause of pelvic pain, Mr. T. G. Stevens said that these have been variously called hæmorrhagic corpus luteum cysts, tarry or chocolate cysts, and apoplectic ovary. They are usually found in sterile women of 25–40, and give rise to severe increasing dysmenorrhœa—otherwise rare after the age of 19—coming on several days before the flow and lasting for two days; rectal pressure and pain due to adhesions; dyspareunia, and, in half the cases, menorrhagia. Swellings of moderate size on either side of a partly fixed uterus to which they are somewhat attached, in conjunction with these symptoms and in the absence of any history of pelvic peritonitis, are probably hæmorrhagic cysts. Inflammatory tubal swellings never have the same insidious onset. The condition has often been wrongly diagnosed and disregarded, but it is very serious; the patients become chronic invalids and suffer much; the only satisfactory cure is operative, and both ovaries generally need removal. Until recently the pathology has been obscure. In every cyst wall, said Mr. Stevens, a small area of endometrial tissue is found, and the cyst is formed by the menstruation of this tissue, the pressure of blood producing the severe pain. He discussed the possible sources of this "endometrioma," and its relation to adenomyomata and endometriomata found in other positions. He is satisfied that it comes from endometrial tissue carried up through the Fallopian tubes at menstruation and implanted in the ovary, as is proved, he considers, by ovarian sections which have been prepared.

Dr. C. M. Wilson followed with a lecture on

The Patient's Point of View in Treatment.

He began with a plea that where there is a doubt the patient's opinion should have the benefit of it rather than the doctor's prejudice. In uncertain duodenal ulcer medical treatment should be tried. So-called functional disease probably rests on an organic basis, and it is useless to tell a chronic nervous dyspeptic that he is a bundle of nerves; he must have careful examinations and explanations. Exophthalmic goitre is a common disease badly mishandled. Every case is a potential case of heart failure, and must be moved at once into better conditions. Surgical treatment has a mortality of 5–10 per cent., and X rays must always be given a trial first; to operate when the basal metabolic rate is rising is disastrous, and the time must be carefully chosen. Diabetes in a child demands elaborate institutional treatment; in a young adult it demands at least three weeks' careful training and investigation in hospital; in the middle-aged it usually needs a modified diet, and, if this is neglected, a warning about eye troubles; in the aged only complications have to be treated. Briefly, insulin is only indicated in children, in coma, in gangrene, and sometimes when the diet fails. With heart disease in pregnancy labour is usually successful, but serious degeneration follows.

On Sunday morning Mr. Zachary Cope spoke on

Minor Surgery in General Practice.

After referring to the dangers of chloroform and cocaine he dealt briefly with the treatment of various common conditions. No operation should be regarded as unimportant; care is always needed. Breast tumours are outside the province of minor surgery altogether; they must always be treated as malignant till proved benign, and nothing less than the whole section of breast containing them can safely be removed for fear of diffusing cancer cells. In abscesses, contrary to belief, redness and fluctuation are by no means always present. Ischio-rectal abscesses must be diagnosed early to avoid fistulæ; peri-anal pain demands rectal examination; the removal of a circular piece of skin at the centre of the usual cruciform incision gives good drainage. As a guide to infections of the hand Kanavel's book is invaluable. Needles should be localised if possible by seeking for them under X rays with a hypodermic needle containing novocaine. Brilliant green (a 5 per cent. aqueous solution) is useful in erysipelas, and acriflavine is a good general antiseptic. Mr. Cope ended his lecture with ten minor surgical commandments, which prohibit the use of cocaine for small tumours under the skin, of chloroform after adrenalin, and of strapping applied to infants' skin. They prescribe microscopy for all small tumours, radiography for all sprains, and Hilton's method for opening all deed abscesses.

Prof. B. J. Collingwood opened a lecture on

Some Applications of Physiology in Practice

by remarking that it is untrue to say that laboratory work is divorced from clinical work; they are not yet even engaged. His address dealt with the reaction of the blood, and he gave a lucid explanation of the terminology used. The general metabolism makes for acidity, but a constant reaction is vital to the body and is maintained by the alkaline reserve; when this is reduced the body normally excretes acid ions by the lungs. The CO_2 in alveolar air is an index of the acid content of the blood and can be easily and quickly determined. Much diminution of alveolar CO_2 below the normal 5 per cent. therefore means that the alkaline reserve is reduced, since the acid content of the blood varies as the alkaline reserve in order to keep the reaction constant, and it is thus easy to discover and measure acidosis or alkalosis. The second way of getting rid of acid is by the kidney. The urine is a caricature of the blood—it exaggerates any fault—and a slight rise in hydrogen-ion concentration in the blood produces an acid urine. A third defence against acidosis is the combination of acid radicles with ammonia by which, if necessary, ammonium salts are excreted instead of urea.

On Monday morning Mr. Warren Low read a paper on

Malignant Disease of the Colon.

Clinically, he said, it may simulate a dozen diseases. As a rule it is of low malignancy, but there are striking exceptions, and it often occurs earlier in life than other forms. After describing the annular and cauliflower types of growth and showing specimens, Mr. Warren Low discussed ulceration in the distended bowel above the lesion and the types of obstruction which developed. The onset of constipation in a patient over 40 always demands examination; cæcal cancer often produces colicky pain after meals; in obstruction there is often visible peristalsis and a local or general distension. In growths on the left side constipation is seldom absent; on the right side diarrhœa is common, and ten days' intractable diarrhœa in an adult should stimulate investigation; neurasthenic dyspepsia or ulcerative colitis are commonly diagnosed mistakenly. A rectal examination is essential; X rays are rather disappointing at present; the diagnosis from diverticulitis may be impossible, and laparotomy should be done oftener. The vaunted value of blind cæcostomy is illusory in practice, and it is to be reserved for desperate cases and those in which the diagnosis is certain.

Overlooked Causes of Fever in Children.

Prof. Langmead said that in protracted fever, where the child is obviously very ill, one must think of pneumonia, generalised tuberculosis, *B. coli* infection, malignant endocarditis, and typhoid. Too much is laid at the door of worms and dentition, but they are also possible causes. The only absolute sign of generalised tuberculosis is a choroidal tubercle. *B. coli* infection is too often overlooked, as for some reason babies' urine is not examined; offensive urine and rigors may give a clue, and the condition may be a cystitis, pyelitis, or even a fatal pyelonephritis. Though cases of congenital heart occasionally have bouts of fever, they frequently end with malignant endocarditis. Where unexplained fever is the outstanding feature of a case, constipation or mild colitis due to diet—perhaps excess of bananas—is often responsible. Bilious attacks without vomiting, which otherwise resemble bouts of cyclical vomiting, are not uncommon, and food idiopathy is an occasional cause of fever. No throat should ever be forgotten, and otitis media is sometimes exceedingly insidious. Obscure fever also occurs in dental caries, chronic appendicitis, cryptic glandular tuberculosis, and in nervous children whose mental or physical equilibrium has been disturbed. In stomatitis the buccal temperature is sometimes raised spuriously above that of the rectum. Speaking on

Clinical Types in Gynæcology,

Mr. Aleck Bourne said that sterility is often due to fine adhesions or membranes closing the ostia of the Fallopian tubes. In women complaining of sterility who show no constitutional or pelvic abnormality he recommends dilatation of the tubes by gas, to find out whether the ostia are patent. The apparatus is simple. Under an anæsthetic the cervix is slightly dilated and gas is passed into the uterus; a constant low pressure and bubbling sounds on auscultation show that the gas is entering the peritoneal cavity. This procedure is inapplicable if there is sepsis or tubal inflammation and in the week preceding menstruation when congestion occludes the ostia; but apart from constitutional disease it is otherwise safe and rational, and American statistics suggest that it is therapeutic as well as diagnostic. In healthy sterile women with closed ostia a plastic operation is worth trying. Describing the symptoms which may coexist with retroverted uterus, Mr. Bourne said that, practically speaking, its correction is only needed in the type of woman with dyspareunia, a tender "fixed" uterus, and prolapsed ovaries, in marked prolapse, and in some cases of sterility and repeated abortions. He ended by mentioning the value of X rays applied to the thyroid in "functional menorrhagia," and the possibilities of intra-uterine radium in this condition.

On Monday afternoon Sir William Willcox lectured on

Chronic Toxæmia,

its recognition and treatment. He regards latent infection as the most important known ætiological factor in disease. The relation of toxæmia to diabetes, exophthalmic goitre, appendicitis, gastric ulcer, arthritis, and many other conditions is generally recognised. Its symptoms include wasting, debility, neurasthenia, and a muddy complexion; the last is very suggestive. The irregular pyrexia may suggest typhoid, and amongst many results of toxæmia are thrombosis, hæmorrhages, myocarditis, and endocarditis. The gradual rise of blood pressure throughout life is probably a result of toxæmia which might be avoided, and it has been suggested that 75 per cent. of mental disease is toxæmic in origin. Teeth, tonsils, antra, bowel, and urogenital system—all require investigation in doubtful cases. In intestinal infection there is often an atonic colon, a palpable cæcum, and indicanuria. Colon lavage may yield good material for examination, and is a simple effective form of treatment which any intelligent nurse can carry out. Vaccines should only be given after removing the focus, if that is possible, and need caution in diseases like gout in which resistance to bacteria is poor. Vaccine dosage, indeed, is generally too large.

Cancer of the Breast.

Mr. Duncan Fitzwilliams said that it may be many years before Barnard's findings can be accepted as proved. To establish that cancer is bacterial would not necessarily give us a cure, and the only certainty about the disease is that it is non-infective. Breast tumours in women over 35 are malignant in 80 per cent. of cases. The remaining 20 per cent. are made up by abscess, which is usually puerperal and therefore rare at this age; adenoma, which commonly occurs in younger women; lipoma, syphilis, tuberculosis, and duct papilloma. This last often gives a blood-stained discharge and it is impossible to say in any given case whether it is malignant or not. The hope of cure in breast carcinoma depends on really early diagnosis. To wait for pain, involvement of the skin, nipple retraction, or axillary swellings is futile. If a woman complains of uneasiness in the breast and anything abnormal can be felt, there is only one proper course—microscopy. There is no other way of diagnosis at the time when the patient will have a 60–80 per cent. chance of cure.

A demonstration followed this lecture and ended the post-graduate course.

IMPERIAL SOCIAL HYGIENE CONGRESS,

WEMBLEY, OCT. 5TH–7TH.

UNDER the auspices of the British Social Hygiene Council a very largely attended Imperial Social Hygiene Congress took place in Conference Hall No. 3 at the British Empire Exhibition at Wembley on Oct. 5th, 6th, and 7th. The chair was occupied by Sir Auckland Geddes, the President of the Council, who extended a cordial welcome to the various delegates, many of them hailing from distant Colonies and Dependencies.

Opening by the Secretary for the Colonies.

Mr. L. S. Amery, M.P., Secretary of State for the Colonies, formally opened the proceedings in a speech in which he reviewed the general question of venereal diseases in various parts of the Empire. He said that those who embarked upon this work could well be satisfied by the obvious signs of the increasing interest and recognition of the importance of the subject from the public health standpoint which had been manifested both by the general population and in official quarters. In Africa, especially, the wrestling with the problem had got to be carried through by the people themselves, and it must be remembered that the African native was not, either in physique or intelligence, capable of coping with the great task which was to be attacked there, hence the great requirement was the enhanced development of the people, especially on the physical side. The foundation of African disease was not one which was inherent in climate so much as inherent in man; it was due to neglect and was therefore eradicable. The increasing importance of the part which medicine had to play in the administration of the tropics was patent to all at headquarters who could take a general view; and what applied to Africa was also applicable, in smaller measure, to other parts of the Empire. The Colonial Office was now giving greater attention to the suggestions of the Advisory Council, and had increased the grant to the body responsible for this Congress. Under the auspices of Mr. Baldwin and Lord Balfour the British Government had created a new policy in the form of the Committee of Civil Research, which would do for the scientific aspect of our national life what the Committee of Imperial Defence did 20 years ago for the external security of our national life. He emphasised the fact that the administration of the Empire as a whole must be based upon a sound health policy. The particular diseases with which the present Congress was concerned were among the most serious and yet most hopeful to which any body of workers or reformers could devote themselves; the wastage and destruction of human life for which they were answerable was being more and more realised, and with the march of scientific research in regard to them they could be eradicated given a sufficiently strong public opinion and a determination to combat them. The chief barriers in the past had been ignorance, indifference, and fatalism, creating a very hopeless public outlook. Concealment, deliberate or semi-conscious, on the part of the public on this matter had not only affected legislative attempts to deal with it, but had even influenced the amount of study which had been devoted to it by the medical profession. Very great progress in the matter had recently been made, however, and that largely in consequence of treating the disease frankly as a disease, without permitting any other considerations, such as any stigma, to enter. He expressed his high appreciation of the work being done by the Council throughout the Empire, remarking that one of the great problems of to-day was to build up and to eliminate waste, and there was no form of waste more disastrous than that due to preventable disease.

Mr. Mifzud (Prime Minister of Malta) told the Congress that he attributed great importance to the work being done for the Empire by the Council and by the holding of congresses of the kind, as well as the Imperial efforts to stamp out all diseases in the territories of the Crown, instancing especially Mediterranean fever and venereal diseases.

Mr. James McNeill (High Commissioner for the Irish Free State) followed and expressed similar sentiments.

Dr. J. Alexander Mitchell (South Africa) spoke of the instruction and inspiration which the work done in this country had afforded to South Africa, where, however, racial differences and peculiarities rendered its application difficult. It was a pity that Governments had not recognised earlier that this campaign was not only a good one, but that it paid.

Dr. D. Colquhoun spoke of the drastic law which the New Zealand Government had placed on the Statute Book relating to the compulsory notification of venereal diseases, and the infliction of penalties in the case of those who, being infected, refused to persevere with the necessary treatment.

Sir Leonard Rogers referred specially to the case of India, and said that the greatest feature of the body responsible for the Congress was that it was one of the first bodies to break the "conspiracy of silence" which had so long attached to the subject. In the large cities of India, and especially in the ports, prostitution was appallingly prevalent, but there was the great off-setting advantage that the great mass of the population was rural, and in those areas early marriages were the rule, and these constituted a safeguard. But when the rural folk visited the towns they often went back infected. The spread of knowledge among the rural as well as the town populations would constitute the great means of checking the spread of venereal diseases.

Naval and Military Aspects.

Surgeon-Commander T. B. Shaw read a paper on the venereal disease problem as it affects the Navy, in which he bore testimony to the valuable work done by the Council at the various ports visited by the Navy. He said that the greater the incidence of venereal disease on shore, the larger would be the number of cases on board ship. The loss to the Service caused by venereal diseases was very heavy; in 1921 the case-ratio of these diseases per 1000 men was 113 in the year, and the total days lost to the Service by men being on the venereal sick-list was 325,557, the daily average of men sick from these conditions being 892. In the years preceding the Great War there had been a steady decline in the incidence, but since 1915 these diseases had shown a steady increase, associated, no doubt, with a general increase in promiscuous sexual intercourse following a general laxity in sexual relationship. He was convinced that as this promiscuity would continue to be practised by some people in spite of all efforts to the contrary, the only hope of eventual extermination of these diseases lay in the wider application of means of disinfection of the parts immediately after connexion. His experience in the Service had convinced him that when prophylactic measures were properly used there was little or no risk of contracting the disease. Dr. Shaw proceeded to give his views on particular measures applicable to various conditions in the Service, such as restriction of leave and placing certain districts in foreign ports "out of bounds." He had an unflattering word to say about China and the city of Cape Town, the latter chiefly on account of the great prevalence of these diseases among the coloured population.

Major E. C. Lambkin (representing the War Office) read a paper on venereal diseases in the Army, in which he said that in the great advances made in connexion with the subject the social influences, especially temperance, played a great part. During the last 20 years, excluding the war period, the incidence of these diseases in the Army at home showed a steady decline. In 1904 these admissions were at the rate of 55·8 per 1000, and in 1922 25·9 per 1000.

The admissions in garrisons abroad had always been high, partly owing to lack of provision for regular exercise, partly to laxity of treatment in small scattered units. In the area of occupation on the Rhine and in Turkey the problem was one of real difficulty; in Cologne alone it was computed that there were 6000 prostitutes. The Aldershot Command continued to show the lowest incidence figures, and here the conditions were good, and the organisation of amusements and recreations rendered it less necessary for the soldier to spend his leisure outside. Twenty per cent. of the cases became infected while absent on leave, and many were found to have contracted their disease from amateurs, not from prostitutes. He emphatically declared, contrary to the view held by some, that the Army did not condone or encourage sexual irregularities, but did its best to make the conditions for the soldier as alert and invigorating as possible. There should be some organised attempt at prevention by medical means, such as the packet in use in the Navy. He knew of one command in which a practically clean bill of sexual health was due to the enthusiasm and friendly attitude towards the men of one orderly, who secured attention to immediate measures as soon as risk of infection had been encountered. In Army life concealment of these diseases was of rare occurrence; the trouble was to persuade the men of the need of taking due precautions.

In the ensuing discussion Sir Leonard Rogers expressed surprise that as immediate disinfection was of so much value when properly carried out, the figures for the Navy were not better than they had been shown to be. Colonel L. W. Harrison said his view was that in recent years the proportion of relapses to fresh infections had considerably diminished, due to the more efficient treatment now prevailing. Dr. T. G. Stokes asked whether measures had been adopted to prevent the spread of these diseases to the civilian population by discharged soldiers. Mr. E. B. Turner said his experience was that 48 per cent. of sufferers had attempted the prophylactic treatment, and it had failed. Success or failure in this matter depended largely, he thought, on the personality of the man in charge.

Dr. Shaw replied that if all the men could be got to use suitable prophylaxis immediately after connexion, venereal diseases would soon be exterminated. During six months 1400 preventive outfits were issued, and only one man using such got syphilis, and he delayed its use an hour. Work was now being done on a mercuric iodide soap.

Major Lambkin, in his replies, said there was, in the Army, no compulsion about the use of preventive measures. No man was discharged from the Army until he was deemed to be free from infection, and a man still having the disease when he left the Army was notified to attend the nearest venereal diseases clinic. Patients with gonorrhœa were subjected to every known test before discharge, and relapses were now far fewer than formerly. The moral teaching of the men was left largely to the chaplains.

The Administrative Position Within the Empire.

A paper on this aspect of the subject was read by Mr. C. M. Kohan, who presented a succinct epitome of enactments and regulations bearing on the subject in the various parts of the Empire, remarking that India appeared to be practically untouched by ad hoc legislation dealing with venereal diseases. The most drastic laws seemed to obtain in Queensland, but expert witnesses stated before a Royal Commission in Australia that notification by medical practitioners of cases of these diseases under their treatment was not being efficiently observed. That Commission also received much evidence as to considerable infection by female amateurs.

Dr. J. H. Mitchell (S. Africa) paid a warm tribute to Mr. Kohan for his laborious research.

Methods of Health Propaganda in the Far East.

Sir Claude Hill, K.C.S.I. (Director-General, League of Red Cross Societies), read a paper on this subject. He said that methods of sanitation could only become effective with the informed coöperation of the people themselves. In the League secretariat, therefore, all possible information had been collected as to the chief causes of the suffering and disability of the people. He set out in detail the methods of propaganda employed, and exhibited specimens of posters and other means of pictorial instruction. The organisation he represented had been able to arrange for the delivery of 30,000 popular lectures on the subject. Also a health exhibition was organised at Bangkok in 1922, and 50 per cent. of the population went to it.

Sir Harry Waters paid a tribute to the work being done by the Red Cross League, and especially that accomplished by Dr. Peters. Mrs. Billinghurst said that an attempt was made in Shanghai to start a V.D. clinic for women, but opposition to the proposal by the nursing sisters, who belonged to a Roman Catholic order, stultified this.

The Diseases in Relation to Race and Climate.

Dr. H. M. Hanschell read a communication on the relation of these diseases to race and climate, based largely on his experience as pathologist at the V.D. clinic at the Seamen's Hospital, Royal Albert Docks. He considered that reported differences in the several venereal diseases in different racial groups were founded mainly on locally conditional circumstances affecting the investigation of these diseases.

Dr. P. T. Harper spoke of the mildness of these diseases in Fiji, where the people were practically vegetarians and consumed very little alcohol. The bulky vegetable diet caused frequent evacuations, and intestinal toxæmia was thus rendered less liable to occur. He thought active immunity against syphilis was caused by their having been inoculated when quite young with yaws.

Lieut.-Colonel W. R. Dawson pointed out that cases of syphilis which were supposed to have been cured by injection of malaria still had active treponema pallidum in their system.

On Tuesday morning the meeting was presided over by Viscount Willingdon.

Syphilis and Cardiac Disease in India.

Sir Leonard Rogers read a paper in which he made a comparison of the incidence of syphilis and cardiac diseases in India with that in this country. Rheumatic endocarditis, in 1000 post mortems in London, gave a mortality of 3·7 per cent., whereas in Calcutta there were no deaths from this cause. Aneurysm gave 3·2 per cent. for London, 1·59 per cent. for Calcutta. Ulcerative endocarditis was also definitely more frequent in London than in India. Practically all the heart disease in India was due to syphilis.

The Chairman expressed his great appreciation of the work which had been done by the I.M.S., especially in such a country as India, where there was a great suspicion and distrust of anything new. Recently it had been decided, with the full concurrence of the Governments of Bombay, Madras, and Bengal, as well as that of Burma, to send out a small expert commission to give what expert help it could in assisting to stamp out venereal diseases, which, especially in the centres of industry and the ports of the country, were on the increase.

The position of the campaign in various parts of the Dependency was then dealt with in papers by Colonel R. M. Carter (Bombay) in relation to Bombay; Major W. L. Harnett, who dealt with Calcutta, Lieut.-Colonel T. G. Stokes, reviewing the Central Provinces; and Lieut.-Colonel W. H. Forster in relation to the Punjab. Colonel Carter thought more good would be done by controlling and seeking to improve brothels than by drastic suppression of them. All the papers showed sincere and careful work. There was a short general discussion.

Congenital Syphilis in India.

Dr. Kathleen Vaughan (Kashmir) spoke of her experiences during the three years she was in charge of the Jubilee Zenana Hospital at Srinagar. There was, she said, a regular trade in women with the Punjab, and when these women were no longer fit for their trade they returned to their native land, and no doubt swelled the ranks of the diseased there. The Indian woman was a passive agent in her own degradation, a very important fact to remember. Some of the women who had led such a life practised midwifery in their declining years. The speaker said that the Kashmiri Hindus were gradually disappearing, and four chief reasons for this were venereal disease, tuberculosis, osteomalacia (among the women), and the practice of infanticide by throwing unwanted children into the rivers. She had found the whole place to be overrun with disease. Children of 10 and 11 years of age were sent to their husbands' houses, and often were killed as a result. Many girls before reaching puberty had been infected by their husbands with gonorrhœa, and gonorrhœal ophthalmia was all too common. Dr. Vaughan said the first step should be the investigation of the conditions here described, then the distribution of suitable literature, then the provision of free treatment, and control of the depressing traffic in women which was going on.

The final paper of this morning's session was by Mr. H. W. Bryant, the general secretary of the Bombay Y.M.C.A., who said that some of the largest problems which workers in his agency had to contend with were housing and poverty, early marriages and infantile mortality, and prostitution. These he dealt with in detail.

(To be continued.)

IMPERIAL SOCIAL HYGIENE CONGRESS: THE DINNER.

The Congress dinner was held at the Princes Restaurant, Piccadilly, on Monday evening, Oct. 5th, when Sir Auckland Geddes, chairman of the Council, occupied the chair. After the loyal toasts, the toast of "The Empire" was proposed by Mr. L. S. Amery, Secretary of State for the Colonies, who spoke of the work of his predecessors, Mr. Joseph Chamberlain and Lord Milner, in building up a health tradition in the Colonies. The outlook as regards venereal disease was both serious and hopeful, for he realised how much could be done by a few people who really cared. Viscount Willingdon, who responded, acknowledged the part played by the British Social Hygiene Council in raising up a healthy virile people to carry on the work of the Empire. Sir Auckland Geddes proposed "The Congress," whose great object it was to keep steadily before responsible officials and the public the instructed point of view. Sir Alfred Mond, in responding, remarked on one very important item of progress—namely, that the fresh air of discussion had been let in on the subject of venereal disease. In this country syphilis had been reduced by one-half in the last four years, and he saw no reason why it should not be stamped out. Sir William Schooling proposed "The Delegates and Guests," to which, in the absence owing to illness of Dame Rachel Crowdy, response was made by Sir Claude Hill, who spoke of the increasing influence of British thought throughout the world and of the unique position of women in British social work, and by Mr. Junkin, of the Sun Life Insurance Office of Canada, who made the gratifying announcement that his company proposed to make a donation to the funds of the Council from their large unallotted surplus. Prof. Winifred Cullis neatly proposed thanks to Sir Auckland Geddes for presiding.

NEW MATERNITY HOME FOR CHESTER.—The new Chester Maternity Hospital, situated in White Friars, was opened on Sept. 30th by the Marchioness of Cambridge. The expenditure on the building and equipment amounted to £7000, and the hospital is opened free of debt.

Public Health Services.

SCHOOL MEDICAL SERVICE.

THE following figures are given in the reports for 1924:—

Name of district.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
West Ham ..	—†	—†	16,833	17,087	21·5
Llanelly	—†	—†	1,375	1,974	15·49
Nuneaton ..	7,789	—†	1,658	7,005	11·5
Soke of Peterborough C.C.	—†	1,425	500	595	—†
Rutland C.C. ..	—†	2,627	773	787	—†
Swindon B.....	8,868	7,701	2,491	5,168	33·3
Northampton B.	—†	—†	3,165	8,825	16·4
Dover	—†	5,461	1,888	1,725	13·2
Leicestershire C.C.	35,890	—†	10,255	7,600	11·9

* Excluding dental defects and uncleanliness.
C.C. = County council. B. = Borough. † = Not given.

West Ham.—Dr. F. Garland Collins's report is a straightforward account of the various phases of school-work well carried out, but there is no mention of any linking-up of the maternity and child welfare scheme with the school activities. The large number of special examinations is a token of the good work done. These children are recommended by teachers, parents, attendance officers, and nurses for examination; representing as they do the ailing section of the school population, they are deserving of special attention. Blind, deaf, physically and mentally defective children are all cared for, either in the borough itself or by arrangement with neighbouring authorities. Open-air classes are held in many schools and two new open-air schools are now in operation. Though only the 6, 7, and 8 year-old children are examined by the dentists, the quality of the work is high, as 83 per cent. of those found to require treatment get it.

Llanelly.—Many interesting tables are given in Dr. L. W. Pole's report which show at a glance the percentage of the various defects. The figures given for enlarged cervical glands (25·2 per cent.) is high, but no doubt includes all the cases of palpable glands. The vexed question of "What is anæmia?" is raised by the large percentage (32 per cent.) of routine children marked as anæmic. In these times it is encouraging to see that 79·8 per cent. of the children examined were found to be vaccinated. A dental surgeon has been recently appointed, and in order to overtake the long arrears has instructed the school nurses in examination for dental caries, and he proposes that they should carry out the inspections while he devotes his time to treatment. This is no doubt expedient as a temporary arrangement.

Nuneaton.—The varying standards adopted by examining medical officers is clearly shown when we see that less than 0·2 per cent. of Nuneaton children who were examined suffer from anæmia, against 32 per cent. in Llanelly, while 1·5 per cent. of the Nuneaton children have enlarged cervical glands, compared with 25·2 per cent. in Llanelly. Dr. K. E. Tapper remarks on the progress made in the school medical service since he took over the work, but points the road for the future advancement by, among other things, extending open-air facilities and opening special classes for abnormal children. He concludes with justice that the cumulative

benefits of the early treatment of all ailing children cannot be measured in £ s. d.

Soke of Peterborough C.C. and Rutland C.C.—The school medical officer for Soke and Rutland, Dr. Christopher Rolleston, reports that, though correction of visual defects is popular, in only 21 cases out of 111 have parents in Soke sanctioned the proposed operations for enlarged tonsils and adenoids. He discusses the causes and effects of this condition, and finds that 58 per cent. of children in whom it is present show some retardation in their studies. Facilities for treatment and the coöperation of parents are both much better in Rutland than in Soke. Dr. Rolleston has investigated the physical condition and environment of all the backward children in his areas, and in about 50 per cent. of cases could find no causal factor.

Swindon.—Dr. Dunstan Brewer finds that primary cases of ringworm are often traceable to infection from cattle. He thinks that there is no justification for separating severe myopia from slight myopia and considering them as different entities. In addition to myopia, dental caries, enlargement and disordered action of the thyroid, and spinal curvature are important factors in secondary schools. Dental caries is neglected more often in secondary than elementary schools; apart from this, hyperthyroidism is the most prominent condition in Swindon secondary schools. Interesting comments are made on "overstrain."

Northampton.—The offices of medical officer of health and school medical officer have been combined so as to increase coöperation between the services. Dr. J. Doig McCrindle introduces the report of the assistant school medical officer, Dr. J. H. Mason. The pressure of work has made special inquiries impossible. The number of children unvaccinated is deplored. Investigation of 203 children who have left mental defective schools reveals that of those alive 40 per cent. are at work, 44 per cent. in institutions, and the remainder unemployed.

Dover.—Dr. A. B. McMaster reports that the facilities for visual correction are increasingly used. Investigation has been made of the relation of visual defects to improper illumination in schools. An account is given of lessons in mothercraft by school nurses who are also health visitors, and the scheme is to be commended. The lack of special schools is regrettable, though an open-air school is promised.

Leicestershire.—Dr. T. Robinson reports no provision of open-air schools or classes for blind, deaf, or physically or mentally defective children, and no definite orthopædic scheme is yet in operation. The number of crippled children (157) and of mentally defective (26) is incredibly small out of a school population of 35,800. Dr. J. B. Dalton states that in a small-pox outbreak at Melton Mowbray the schools were kept open and the children could thus be effectively supervised and absentees noted. Dr. S. E. Murray has investigated a series of 77 cases of heart disease and studied their ætiology.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 26th, 1925.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 27; scarlet fever, 1964; diphtheria, 929; enteric fever, 76; pneumonia, 764; puerperal fever, 32; cerebro-spinal fever, 6; acute poliomyelitis, 16; acute polio-encephalitis, 1; encephalitis lethargica, 48; dysentery, 3; ophthalmia neonatorum, 103. There were no cases of cholera, plague, or typhus notified during the week.

Deaths.—In the aggregate of great towns, including London, there were 3 deaths from enteric fever, 14 from measles, 3 from scarlet fever, 32 from whooping-cough, 41 from influenza, and 24 from diphtheria. There were 173 deaths of children under 2 years from diarrhœa and enteritis, as compared with 220, 219, 230, and 218 in the preceding weeks. In London itself the deaths from diarrhœa and enteritis in children under 2 years numbered 46, as compared with 55, 43, 38, and 40 in the preceding weeks; there were 8 deaths from diphtheria, 4 from whooping-cough, and 5 from influenza.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

G. W. Garde to be Surg. Lt.

ROYAL ARMY MEDICAL CORPS.

C. F. McLean to be temp. Lt.

MILITIA.

Capt. S. W. Hoyland to be Maj.

TERRITORIAL ARMY.

Lt.-Col. C. H. S. Redmond to be Bt. Col.
Capt. H. F. W. Adams, late R.A.M.C., to be Capt.
Capt. R. C. Aitchison (Res. of Off.) to be Maj. (prov.)
General Hospitals: Lt.-Col. A. H. Gosse to be Bt. Col.

ROYAL AIR FORCE.

Air Vice-Marshal D. Munro, C.B., C.I.E., Director of Medical Services, R.A.F., has been appointed an Honorary Surgeon to the King.

Group Capt. H. V. Wells, C.B.E., has been appointed an Honorary Physician to the King.

Flight Lt. J. C. Osburne is granted a permanent commission in the rank stated.

A. F. Cook is granted a short service commission as a Flying Officer for three years on the active list.

DEATHS IN THE SERVICES.

Major-General Sir Hayward Reader Whitehead, K.C.B., died at Lyndhurst on Sept. 28th, aged 70. A student at Charing Cross Hospital, he qualified with the M.R.C.S. in 1877, and afterwards held appointments both at the institution where he received his medical education and at the Royal Westminster Ophthalmic Hospital. In 1880 he took the F.R.C.S. Eng., and in the same year the L.R.C.P. Edin. Two years later he was awarded the Montefiore Gold Medal at the Army Medical School, Netley, and became a surgeon in the Army Medical Department, reaching the rank of surgeon-major in 1894. He saw service in the Tirah Expedition of 1897–8, and was present at the action at Dargai, the capture of Sampagha and Arhanga passes. He was also with the expedition against the Chamkanni Khel Afridis, and took part in the march through the Bazar Valley (mentioned in dispatches and promoted lieutenant-colonel). From 1891 to 1896 he was assistant professor of military surgery at Netley. In 1905 he was promoted colonel and appointed administrative medical officer in India. In 1908 he served with the Mohmand Expedition as principal medical officer (again mentioned in dispatches), and in the following year he was promoted surgeon-general and appointed Deputy Director of Medical Services, Southern Command. He was transferred to the Eastern Command in 1912. In the second year of the late war he was sent to Malta as Director of Medical Services, and was afterwards appointed to the British Salonika Force. Created C.B. in 1909, he was promoted to K.C.B. in 1917. He also held French, Serbian, and Greek decorations, and was a Knight of Grace of St. John of Jerusalem. He married, in 1893, Evelyn Wynne, daughter of Colonel Cayley, C.M.G., I.M.S.

SIR HAYWARD WHITEHEAD.

THE MOTOR SHOW AT OLYMPIA.

OCT. 9TH TO 17TH.

(BY OUR MOTORING CORRESPONDENT.)

THE CHOICE OF A CAR.

DURING the last six years British cars, especially the small and medium ones, have been developed to an amazing pitch of excellence. They are all in their particular ways first class, and prices appear to have come to rock-bottom and will probably start to rise before the next show. The trouble is to choose. The press particularly interested in motor vehicles issue many bulky show numbers with very complete and accurate buyers' guides; the *Autocar* has excelled itself in particular. Presuming that the medical man will want a small or middle sized car, preferably covered and absolutely trustworthy; that he will, perhaps, in the course of his duties overwork it and not attend to it overmuch, and that he will seriously consider the price of the car, these notes will direct him to a few of the many cars that satisfy these conditions. Every single car is superlatively good, and the modern engine develops about twice as much power for its size as the pre-war one. If he wants four-wheel brakes he can generally have them for another £20 or so if they are not fitted as standard; most cars have low-pressure tyres, and all are fully equipped with excellent starting and lighting sets. Once the medical man buys a car, he may be fairly certain that he need buy nothing and do nothing for six months at least, except pour in fluids and occasionally pump in grease through special nipples with a special gun. The old days of buying indispensable accessories as extras, and then of anxious watching and expensive repairing, are over. Here, then, are a very few possible choices, in ascending order of price.

There are many excellent foreign cars on view as well as our own British makes, but fine as they are, there is none that cannot be matched in our own country.

A Selection of Cars.

Trojan, 10 h.p. Stand 182. Four-seater, £125 with solid tyres and £130 with pneumatic. Wonderful springs and exceptionally simple controls. Very economical running. The saloon cost £158 with pneumatics, but the open model is perfectly waterproof. No electric starter, but has a mechanical device worked from the seat.

Austin, 7 h.p. Stand 211. The smallest British car. Two roomy seats and a capacious boot with an extremely powerful little engine. £149.

Jowett, 7 h.p. Stand 98. Another very powerful miniature, tested fully in the West Riding. The open two-seater is £150, and there is a very good saloon at £200, a new and surprisingly roomy design.

Morris-Cowley, 11·9 h.p. Stand 184. Very sweet to drive, and the starter is exceptionally silent. All Morrisses now have all-weather equipment, shock absorbers, and balloon tyres. Open two-seater £162 10*s*., and £7 10*s*. extra for four-wheel brakes. Coupé £195, saloon £235, both including four-wheel brakes. The Oxford, which is 13·9 h.p. and very luxurious, costs £240 as an open two-seater, £285 as a coupé, and £350 as a saloon, all with four-wheel brakes.

Rover, 9 h.p. Stand 107. Two-seaters £185 and £212 10*s*.; saloon £285, including four-wheel brakes. The "super" two-seater costs £220 with four brakes.

Cluley, 10 h.p. Stand 33. Two-seater £225. The all-weather 14 h.p., a recent model, costs £395, and the saloon £475.

Clyno, 11 h.p. Stand 99. This firm makes one of the best motor-cycles in the country, and their cars are equally good. Two-seater £162 10*s*., front brakes £7 10*s*. extra. Saloon, with four-wheel brakes, £265. 13 h.p. two-seater £245, coupé £285, with four-wheel brakes.

Standard, 11 h.p. Stand 106. Exceptionally roomy cars. Coupé £225. 14 h.p., one of the best English two-litre cars. Coupé £365, saloon £450. There are several other kinds of bodies. There is to be a new 12 h.p. chassis at the show, of which no details have been published.

Humber, 9 h.p. Stand 213. Touring £260. 12 h.p. coupé and saloon £555; 15 h.p. saloon £860, a splendid car.

Singer, 10 h.p. Stand 181. Two-seater £225, saloon £280, exceptional value. 14 h.p. saloon, £375.

Hillman, 14 h.p. Touring £295, Saloon £345.

Talbot, 8 h.p. Stand 147. Coupé £325. A very fast and sweet-running engine, quite exceptional for its size. 10 h.p. two-seater £350, coupé £415; 12 h.p. six-cylinder, wide two-seater, £750.

F.I.A.T. Stand 185. This company has sent a fine batch from their vast factory in Turin, and the little 10 h.p. model which has been so popular in the last two years is better than ever. The coupé costs £365, with four-wheel brakes extra.

Austin, 12 h.p. Stand 211. A beautiful little medium-powered car, four speeds and four-wheel brakes. Coach £395; 20 h.p. saloon £650. This is an excellent car of the larger variety at a very low price.

De Dion Bouton. Stand 215. This famous car, which was good even in 1896, worthily represents France. The 10 h.p. coupé costs £395, and the 12 h.p. coupé £610. This make is as fine as anything in the show.

Star, 12 h.p. Stand 136. Touring £365 and £395; saloon £445; 14 h.p. coupé £525; 20 h.p. coupé £700. This firm has made cars from the earliest days, and has six different chassis at this show to choose from, with a large variety of bodies.

Armstrong-Siddeley, 14 h.p. Stand 108. Coupé £425. These are very beautiful cars, by far the cheapest of the real luxury class. The 18 h.p. six-cylinder is one of the most attractive medium-powered cars in the world. The two-seater costs £450 and the coupé £550

Crossley, 14 h.p. Stand 139. All the Crossleys fit four-wheel brakes. The coupé is an ideal doctor's car and costs £540.

Vauxhall, 14 h.p. Stand 135. One of the fastest and best of the two-litre class. There are four-wheel brakes and four speeds on this year's models. Touring £550 and saloon £650 and £750.

Willys-Knight. Stand 150. The Willys six-cylinder and the *Overland* 13·9 h.p. are two fine American-designed machines, the first of which costs £695 and the second £340, both saloon bodies; they are manufactured in this country.

Sunbeam, 14 h.p. Stand 110. The Sunbeam is one of the very best British cars; it is designed by Louis Coatelen, and has a wonderful performance. The coupé is £750 and the two-seater £625, with a saloon at £795.

A Few Hints to Novices.

Other models besides those mentioned also have four-wheel brakes and four speeds, but both features are almost universal in the more expensive cars. For the benefit of readers new to motoring a few hints may not be out of place. Low-pressure tyres, now almost universal, increase the smoothness of the running very considerably, and four-wheel brakes add enormously to safety, especially on hills, but they must be kept in proper adjustment. Whether one dislikes gear-changing or not, four speeds are generally more comfortable than three, and certainly save petrol. The most important point to the medical man who drives his own car, next to docility and sweetness of handling, is protection; this can be judged to a certain extent at sight, but ease of driving needs a road-test. Most coupés keep the wet out, but in some it is difficult to see and signal, and the buyer should sit in the car at the Olympia show and satisfy himself that he can see enough. He should choose a body of grey or brown, which does not show the dirt easily, and should satisfy himself that the controls are well within reach, especially the hand-brake; inaccessibility is the worst feature of many cars and completely spoils a few excellent ones. He will find a dashboard light useful in open cars; closed ones usually have an inside lamp. A "strangler," for cutting off the air when starting, is useful on cold nights, but not many British cars have them. And, lastly, when he takes his trial run, let him choose a wet day if possible. Many coupés and saloons that look beautifully snug at Olympia become a perfect shower-bath in wet weather through faulty joints in the windscreen and faulty fitting in the windows.

Correspondence.

"Audi alteram partem."

EXPERIMENTAL EPIDEMIOLOGY.

To the Editor of THE LANCET.

SIR,—In your leading article under the above heading in THE LANCET of Oct. 3rd there is one point on which I should wish to offer a comment, and an explanation. When I first had the good fortune to engage the interest of Dr. Greenwood in these experiments, some five years ago, it soon became evident that the satisfactory progress of the investigation demanded close coöperation, not only in interpreting the results, but in planning the experiments. Since that time those experiments which were likely to yield data requiring statistical analysis have been devised by Dr. Greenwood and myself, after consideration of the results already obtained, and of the experimental or statistical difficulties likely to be encountered; and the experimental method has, from time to time, been modified as new problems or unforeseen difficulties have presented themselves.

Dr. Greenwood's part of the investigation has, therefore, not consisted merely in applying statistical methods of analysis to results which I have independently obtained; but throughout this part of the work the investigation has been a joint one in the full sense of the word, and the statistical side has been carefully considered in devising the experiments as well as in interpreting the results. It is our firm conviction that full and equal coöperation of this kind is essential if progress is to be made in the investigation of an intrinsically difficult problem.

I am, Sir, yours faithfully,

W. W. C. TOPLEY.

Public Health Laboratory, Manchester, Oct. 2nd, 1925.

TECHNICAL INSTRUCTION IN OPERATIVE SURGERY.

To the Editor of THE LANCET.

SIR,—From what I constantly see I am forced to conclude that in the plethora of subjects which students have nowadays to tackle surgical handicraft is apt to be forgotten, and that operative training is distinctly inferior to that of midwifery in which a number of personal attendances must accompany the application for admission to the final examination. I should like to know what percentage of the candidates for the higher surgical diplomas know how to mop a wound—that is, will apply the sponge with a steady vertical dab instead of a fierce wipe which sweeps away ligatures and causes small unclamped vessels to bleed.

I beg to invite the attention of clinical operators also to avoid teaching their pupils to retain their hands in full pronation when assisting at operation. There is not anything which tempts me more to open my mouth than when the assistant is retracting the edges of wound or applying a ligature to have the whole field obfuscated with his pronated fists, with the result that he barely sees what he is doing and I cannot see anything. It seems somewhat of a farce to set papers for examination containing questions—for example, the dissection and difficulties attending exposure of the pituitary gland, carotid body, or semilunar ganglion—to candidates who do not know how to hold a knife or handle a needle, and if entrusted with the application of a ligature to a pedicle, even money, will make such a violent tug on the second knot as to smash up the whole procedure.

I am quite aware that this burlesque is not, in the majority of instances, due to any personal fault of the unfortunate youth camouflaged with a licence to practise surgery, but to the miserable dog-in-the-manger stunt which gives nothing, and in wanton stupidity, admits of a yearly turn-out of men as qualified surgeons who are absolutely incapable for want of personal technical instruction to perform any operation on any living thing.

I wonder what kind of door or window an embryo carpenter would turn out if he had not served his time, with tools in fist, under the direction of his boss.

I am, Sir, yours faithfully,

Buenos Aires, Sept. 9th, 1925. JOHN O'CONOR.

*** Sir John O'Conor adds in a postscript that his letter was not inspired by anything which Mr. Bernard Shaw has written—or may write. Coming nearer home it cannot have been inspired either by the annotation on "The Surgeon as a Technician" in our issue of Sept. 26th (p. 657) to which it is so highly apposite.—ED. L.

PERSISTENT DIARRHŒA IN PHTHISIS.

To the Editor of THE LANCET.

SIR,—I have found two drugs not mentioned by Dr. de Carle Woodcock useful in the treatment of this very distressing complication. For some time now I have used intramuscular injections (or intravenous, in much weaker dilutions) of calcium chloride in doses of ½–1 gr. at intervals of two or three days. It has certainly some beneficial effect, especially if given in conjunction with large doses of bismuth by the mouth, say 1–2 dr. thrice daily. The action of calcium chloride is very slow, and injections should be continued for two or three weeks before definite results are expected. Persistent diarrhœa in tuberculosis is not always due to specific infection of the bowels; and when there is clinical evidence of fermentative changes in the large gut, dimol in doses of 1 gr. thrice daily is also a very useful adjunct to dietetics and other methods of treatment. This treatment is more effective if a preliminary period of semi-starvation has been prescribed and the tract prepared with a dose of calomel.

Dr. Woodcock raises an interesting point which will have to be settled soon unless pneumothorax therapy is to suffer a set-back. I refer to the connexion between artificial pneumothorax and a supervening diarrhœa. It appears to me that pneumothorax has a tendency to cause (sooner or later) the appearance of another active focus somewhere else in the body, and this tendency is more marked if comparatively high pressures have been used in producing collapse. The intestinal tract, or some other organ, may be the seat of one or two small and comparatively quiescent foci, and by collapsing the lung too effectively or too quickly the patient's system gets an overdose of autotuberculin, resulting in reactivation of these indolent foci.

This is, in my opinion, a real danger in pneumothorax treatment. One is apt to overlook the fact that pulmonary tuberculosis is one manifestation (of many) of a general disease.

I am, Sir, yours faithfully,

FELIX SAVY.

Grampian Sanatorium, Kingussie, Sept. 29th, 1925.

ALTRUISM AND THE "COMMON COLD."

To the Editor of THE LANCET.

SIR,—Your correspondent, Dr. J. A. Drake, writes of the thoughtless distribution of the "cold" from person to person. The late Sir William Robertson Nicoll is said to have maintained that "colds, neuralgia, and most other ills arise from the great modern curse of fresh air." The sound of such a voice crying in the wilderness must find an involuntary echo in many conservative hearts beating beneath heavy overcoats to-day; for the curse of fresh air is upon us, and the curse has come to stay. It is true, of course, that although there are few who dare to protest there are many who only accept the

inevitable with reservations. Mr. Stephen Leacock, for instance, whilst strongly supporting the use of fresh air, says that after the house has been filled with it the windows and doors should be carefully closed so as not to let any of it escape; properly enclosed it will last for years. In this view he follows Bacon, who remarked in his "History of Life and Death" that: "It is to be observed that air accustomed to the body doth less prey on it, than new air, and often changed." But the fashion of the day is to favour fresh air in and out of season and in every place except the secret places of the home.

It is supposed by many that this retrogressive movement back to Nature will eliminate half the minor diseases of the cities, and in particular it is claimed that the common cold is doomed as soon as it is threatened with an open window. If it were to receive, they say, another name more in keeping with its ætiology, such as a "warm" or a "stuffy," it would never have an opportunity to attack anyone again. But here they do not convince the majority of reasonable people, who think that an open window threatens the patient more than his disease, and who know perfectly well that whether you call it common-or-garden or common-or-drawing-room, there is no doubt of the trouble being a *cold*.

It is, of course, an ingenious idea that the sensation of chill invariably associated with the onset is due to the first working of the disease in the system; and such no doubt is the explanation of the general experience which gave the name to the complaint. But it is too much to say that cold is not and cannot be an ætiological factor. There are certain people who react astonishingly rapidly to the chilling of their feet, by the immediate development of profuse rhinorrhœa. This may be a purely nervous disorder, but the fact remains that it is only necessary for them to remove their shoes and walk about on a cold floor for a few minutes in order to work the oracle, and if medical opinion cannot accept any mysterious connexion between the nose and the feet, apart from their common faculty of running, it must at least consider whether local improperly compensated chill does not play some part in stirring up nasal infection. Such a defence is the last ditch of the diehard; but even a proof of the connexion between cold and colds cannot save him from those who prefer to put the hardness into living.

It was long ago observed that whereas the English muffled themselves to the eyes when out of doors and permitted a freezing blast throughout their houses, the French, whilst keeping very warm indoors, took the air outside their houses in the scantiest garb. Each of these habits is as reasonable as it appears foolish. When man originally adopted clothing it was intended to permit his exposure to colder climates, and so far it was successful; but since then it has been used to dull the activities of the skin and the race has simply been geared up to warmer surroundings. Any system which encourages the exposure of healthy persons to extremes of temperature, and relegates clothing and housing to their proper place as mere supplements, is increasing the human efficiency. Especially it reduces susceptibility to chill, and the use of cold baths and the habit of wearing as few clothes as possible in all weathers is most likely to produce a healthy skin which will laugh at exposure to draughts. Such a régime is applicable only to those who react properly to it, and for those who suffer from constitutional disease, or for the aged, a protected life is obviously desirable. "And therefore," said Bacon, "poor people who live always within the smell of the same chimney and change not their seats are commonly longest lived, notwithstanding to other operations, especially for them whose spirits are not altogether dull, we judge change of air to be very profitable." Another class for whom the panacea of exposure proves ineffective in preventing colds is that enormous body of persons with nasal abnormalities. How many medical men hide a deflected septum beneath a smiling face? Reflection on such organic aspects of the common cold leads to consideration of infection. The only change in nomenclature which would at present find favour with the man in the street would be a change from active to passive mood. He considers himself caught, rather than catching. Agreeing with the ancient saying that chronic diseases are brought upon a man by himself but acute diseases are an act of God, he shifts the responsibility for his illness from himself on to the micrococci. And, however much the cultivation of general resistance to cold may be in fashion, it remains true that massive infection or foreign infection will lay low the Arctic explorer or the returning holiday-maker whose resistance may be supposed good. How then can the average man, relying pathetically on a cold bath and an evening stroll without an overcoat, hope to prevail against sudden proximity with a virulent strain of organisms recently developed in another suburb? It seems that everyone likes to get the greatest possible pleasure from misfortune. Seized by a cold some people concentrate on the physical compensations of bed, hot whisky, and sympathy; but others prefer moral satisfaction and carry on bravely with conscious pride. This is more subtle, but far more scandalous, for only too often the path of glory leads but to the grave—and the unfortunate thing is that it is usually someone else's grave. If everyday life must throughout the winter be cursed with such members of society let them at least be segregated. Let them travel only in railway carriages intended for the purpose and clearly labelled "colds," and there let them close the windows and there let them create an emulsion of pride and micrococci to their heart's content.

I am, Sir, yours faithfully,

Oct. 1st, 1925. F.R.C.S.

A SURGICAL COINCIDENCE.

To the Editor of THE LANCET.

SIR,—The occurrence of the same surgical emergency twice in a patient must be very rare. A. M. Z., an Egyptian labourer, aged 40, was brought to me in January, 1923, suffering from acute intestinal obstruction. On examination I remarked a sausage-shaped swelling plainly visible under the abdominal wall. I operated under stovaine anæsthesia and reduced a volvulus of the sigmoid flexure, the patient making an uneventful recovery in 12 days. In August, 1925, a man suffering from abdominal pain came to me, and I was at once struck by something vaguely familiar about the look of his abdomen. It was the same sausage-shaped swelling in my same friend of two and a half years before. I operated under stovaine again, and this time I put some "reefs" into his sigmoid mesentery, so I hope his accident will not occur again. He made another uneventful recovery and left hospital in 13 days.

I am, Sir, yours faithfully,

H. E. S. STIVEN,
P.M.O., Egyptian Government Hospital,
Sept. 10th, 1925. Port Said.

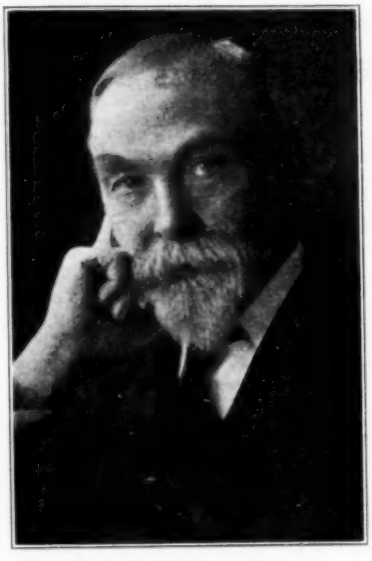
VACCINATION AND COMPULSION IN IRELAND.—Our Dublin correspondent writes: "The vaccination laws in Ireland are compulsory, and no loophole is provided for the conscientious objector. As a result vaccination is, on the whole, fairly thorough, and there has been no outbreak of small-pox in the country for a great many years. During the disturbed period four or five years ago vaccination, however, fell into partial neglect, and when the present Department of Local Government and Public Health came into power there was much leeway to be made up. In most areas this has been done without trouble or opposition, but in the south-east corner of the country, County Wexford, and neighbouring areas, there has for long been a fairly strong antivaccinationist movement, and opposition in that district has been general. The Department of Local Government has done its best to persuade the county health board of Wexford to enforce the law in regard to vaccination, but has failed, and recently the board was informed that steps would be taken by mandamus unless the law was obeyed. The board was still recalcitrant, and it is expected that the department will apply for a mandamus as soon as the courts sit."

Obituary.

JAMES NIVEN, M.A., LL.D. ABERD., M.A., M.B. CAMB.

BY the death, on Sept. 30th, of Dr. J. Niven, late medical officer of health for Manchester, the medical profession is deprived of a member of outstanding character and ability.

James Niven was born in 1851, and after graduating in Arts at Aberdeen he went to Cambridge, where he had a distinguished career as a mathematician. He was eighth wrangler in 1874 and was afterwards elected to a Fellowship at Queen's College; but although his original intention was to study engineering, he went on from Cambridge to St. Thomas's Hospital, and after taking his M.B. in 1880 held an appointment under the Metropolitan Asylums Board. He then went to Manchester and practised privately for four years in a southern suburb. In 1886 he was appointed medical officer of health for Oldham, and in 1894 the sphere of his influence was again widened when he succeeded Dr. John Tatham in the Manchester office. In the 28 years that followed he proved himself one of the greatest of medical officers of health, and one of the most useful public servants that Manchester has ever had. Apart from routine work he carried through many important reforms. In conjunction with the late Prof. S. Delépine he was able to bring about immense improvement in the city's milk-supply; considerable progress was made against tuberculosis, and great strides were made by Manchester in sanitation. It was largely due to his efforts that the death-rate fell from 24·26 per 1000 in the year before his appointment to 13·82 in 1921. His great achievements were made possible by his intense zeal, his patience and perseverance in attention to detail, and his courage in maintaining his opinions when he was satisfied that they rested on a basis of ascertained fact. There were others equally, or even more, successful in the everyday work of administration, but there was none who explored or proved so thoroughly the foundations of public health, or who pointed out so surely or so wisely the lines along which sanitary reform must proceed. No department of health practice escaped his scrutiny, and each in turn was made the subject of careful study; on each he left the impress of his critical and constructive wisdom. He was essentially a realist; he never lost sight of the economic aspect of health work, nor forgot that the chief end and justification of expenditure is the production of healthier, happier, more efficient citizens. Dr. Niven will be remembered for his insistence upon housing reform, for his revision of existing methods of dealing with infectious disease and the machinery of disinfection, and for his valuable interest in tuberculosis. He was the first to advocate notification, and based his useful reports on a voluntary notification scheme.



DR JAMES NIVEN.
[Photograph by Lafayette.

A record of his work, entitled "Observations on the History of Public Health Effort in Manchester," was published in 1923. His other contributions to medical literature were numerous, and his advice was rightly in request at the Ministry of Health, and by his colleagues in the health service. In giving evidence he was always terse and convincing. He was president of the Epidemiological Section of the Royal Society of Medicine, examiner in sanitary science at Cambridge, and lecturer in public health at Manchester University. For his services to preventive medicine he was given medals by the Royal Institute of Public Health and other bodies, and on his retirement from active work at Manchester in 1922, when he passed the age limit, he was publicly thanked by the city.

A former assistant writes: "As a man Niven was possessed of a singularly noble and winning character. One recalls especially his courage and independence, his tireless industry, his unselfishness, his intolerance of sham, and his love of children. Generous in his estimate of the work of others, he was a tireless critic of his own shortcomings. He had a great capacity for inspiring affection and devotion in his staff, and to those of us who were privileged to be so numbered there remains the enduring memory of a kind friend and 'true and very gentle knight.'"

Dr. Niven's somewhat shy and reticent manner hid a personal character that was generous and kindly. His life was one of continuous and unsparing effort in the public cause. Himself a remarkable man, he was a member of a remarkable family. His three brothers were also wranglers at Cambridge; the eldest was Sir William Niven, who was Director of Studies at Greenwich Naval College; and another was Charles Niven, first wrangler in 1867, who became professor of natural philosophy at Aberdeen. Dr. Niven's wife died 12 years ago, and he leaves three daughters.

ALAN REEVE MANBY, M.D. DURH., F.R.C.S. ENG.,
PHYSICIAN EXTRAORDINARY TO THE KING AND QUEEN ALEXANDRA.

Alan Reeve Manby was born in 1848, the son of Dr. Frederic Manby who practised at East Rudham, in Norfolk, and to whose practice he succeeded. He was educated at Epsom College and at Guy's Hospital, where he filled, among other posts after qualification, that of obstetric resident. Almost immediately he joined his father in a practice which had been carried on previously by his grandfather, and from the first he showed the qualities which made him a success in general practice. In 1885 he was appointed surgeon apothecary to the household at Sandringham, where the Prince of Wales, afterwards Edward VII., was often in residence, leading the life of a county gentleman. On the accession of Edward VII. Manby was appointed physician extraordinary, a position which he afterwards held in respect of the present King and of Queen Alexandra. In 1901 he went in attendance on the Prince and Princess of Wales, the present King and Queen, during their Colonial tour, when he received the M.V.O. Two years later he was knighted, and in 1918 promoted K.C.V.O. He was also a Knight Commander of the Order of Dannebrog of Denmark. His intimate relations with the Court were never allowed to interfere either with his practice or with his interest in professional and local affairs. He had a considerable obstetric practice and was at different times chairman of the Norfolk and Norwich Medico-Chirurgical Society, and president of the East Anglian branch of the B.M.A. He was the author of short but practical clinical contributions to THE LANCET and other medical journals, and devised some improvements in several surgical instruments.

He married in 1876 Charlotte, daughter of the late Edmund Farrer, of Petygards, Swaffham, by whom he had one son, Mr. Percy Manby, the Judicial Com-

missioner of the Malay States, and one daughter, the wife of Dr. F. J. Willans, who succeeded his father-in-law as surgeon apothecary to Queen Alexandra and the household at Sandringham.

EDMUND LANGLEY HUNT, C.M.G., L.R.C.P.I.

Dr. Langley Hunt, whose death took place in London on Sept. 30th, was superintending medical officer of Jamaica and was home on leave when he was taken ill. Born in 1868, the second son of the late E. Langley Hunt, of Co. Limerick, he qualified at the Irish Royal Colleges in 1894 and became a civil surgeon with the South African Field Force (1899–1902), part of his service being on the personal staff of the Commander-in-Chief. He was twice mentioned in despatches (two medals, six clasps) and was awarded the C.M.G. in 1902. Later he was employed in the Anglo-German Boundary Commission to Lake Chad, when he received the thanks of the German Government and the Royal Order of the Crown of Prussia (third class). He was appointed to the West African Medical Staff in February, 1905, and did notable work at the time of the outbreak of plague at Accra in 1908. In 1912 he was transferred to Ceylon as inspecting medical officer, becoming principal officer two years later. He was transferred on promotion to Jamaica as superintending medical officer in 1919. Dr. Hunt leaves a widow and three sons.

WILLIAM MORRISTON DAVIES, M.D. EDIN.

WE regret to note the death on Sept. 23rd, after a short illness at Bournemouth, of Dr. William Morriston Davies at the age of 83 years. Dr. Davies was a native of Glamorganshire and spoke Welsh only until he was 16 years old. He graduated at Edinburgh in 1873 and started practice the following year in Huntingdon with Dr. Michael Foster, father of the famous physiologist of the same name. After six years he moved to London, where he practised at 55, Gordon-square, amidst an ever-increasing circle of patients and friends, until his retirement in his sixty-ninth year to the Manor House, Stoke Poges. To his professional duties and to his private life Dr. Davies brought an earnestness and an intuition which gained him the affection of his patients and the esteem of the physicians and surgeons he called to his aid. In his private life he was an enthusiastic collector of old furniture, silver, and mezzotints, and devoted all the time he could spare to travel and sightseeing, in the course of which he acquired an intimate knowledge of the architectural beauties in the cities of England and Europe. A member of the Alpine Club, he was a keen climber, his wife accompanying him in most of his ascents. Dr. Davies was the possessor of an acute power of observation and an ability to retain a clear and correct memory of all that he saw and read. He was a lover of the beautiful both in art and nature, and with his strong personality acquired a host of friends whom he never failed to instil with a similar enthusiasm.

WILLIAM RONALD KIRKNESS, M.R.C.S. ENG.

Dr. W. R. Kirkness, who died on Sept. 19th at Pembury, Tunbridge Wells, at the age of 50, was a son of the late Captain W. Kirkness, of Falmouth. Born at Wimbledon in 1875, educated at Rossall and King's College School, and then deciding to follow the profession of his grandfathers, Dr. Kirkness, of Truro, and Dr. Soltau, of Plymouth, he entered King's College Hospital and became qualified M.R.C.S., L.R.C.P. in 1904. After holding appointments at Wolverhampton, Westminster, West Herts, Children's Hospital at Hackney, and Mount Vernon Hospital for Consumption, he took up general practice at Portsmouth where, in addition to his own work, he acted during the war as civil medical officer with 13th Battalion R.F.A., and R.A.O.C., R.A.S.C., and R.E. When the war ended his health began to deteriorate, so, greatly to the regret of his colleagues and patients at Portsmouth, Dr. Kirkness disposed of his practice and took a smaller one at Pembury, Tunbridge Wells, where he held the appointments of medical superintendent of Tonbridge Union Infirmary and Hospital, medical officer to the Capel Isolation Hospital, and district medical officer of the Tonbridge Union. During the six years he was at Pembury he gained the confidence of a large clientèle and was always willing to assist his fellow practitioners. A chill caught during the course of his duties brought on an attack of pleurisy and double pneumonia which proved fatal despite every attention. His death has cast a gloom over a district where he was universally liked.

Dr. Kirkness leaves a widow, a son, and a daughter, the former a student at Epsom College.

Medical News.

HOSPITAL DINNERS.—A large gathering of old students of *St. Bartholomew's Hospital* sat down in the Great Hall of the hospital on the evening of Oct. 1st, Mr. John Adams, F.R.C.S., occupying the chair. In proposing the health of the Hospital and of the Medical College, the Chairman contrasted the present body of 700 students, 80 per cent. of them University men, with the 223 students in attendance when he entered the hospital in 1868. Bart.'s men had, he said, won during the past year the gold medals at the M.D., M.S., and M.B., B.S. examinations of London University. Sir William Lawrence responded for the hospital in the regretted absence of Lord Stanmore through illness. Plans for new hospital buildings had, he said, at last been drawn up, to be submitted to the Governors next month. There would be 740 beds on the present site, with an additional paying-block of 80 to 100 beds. The Great Hall was to remain as it now was. Mr. W. McAdam Eccles, in replying for the College, spoke of the four medical professorships of London University within the school and of his wish to see all these chairs adequately endowed, and anatomy housed as well as physiology, physics, and pharmacology at present were. During the last summer they had been through another very successful post-graduate course for old hospital men. Sir Anthony Bowlby, who received an ovation, proposed the Health of the Guests, amongst whom were Sir John Bland-Sutton, Sir Archibald Garrod, Surgeon Vice-Admiral J. Chambers, Lieut.-General Sir William Leishman, and Air Commodore D. Munro. Sir John Bland-Sutton responded. The Chairman's Health was proposed by Dr. W. Langdon-Brown and warmly honoured. After dinner there was the usual adjournment for conversation to the School Library.

Charing Cross Hospital held its annual dinner on Oct. 5th in the Adelaide Gallery at Gatti's Restaurant. Dr. W. J. Fenton, the dean, took the chair. The loyal toast was described on the list as "Our Most Illustrious Doctor, His Majesty the King," and there were no other toasts and no speeches whatever, in spite of a vociferous demand that Sir Herbert Waterhouse should play the raconteur. After dinner Mr. John Goss, with the Cathedral Quartette, sang some really delightful songs and chanties. For the arrangement of some of them, including the favourite war song "And if I die, don't bury me at all," the pianist (Mr. Hubert Foss) was responsible, and several had been arranged or composed by Mr. S. Taylor Harris, a student at the hospital. His very spirited ditty about a pirate sprang into immediate local popularity which should become widespread.

The annual dinner of past and present students of *St. George's Hospital* was held on Oct. 1st at the Hyde Park Hotel, Mr. F. Ashton Warner, F.R.C.S., in the chair, when 160 alumni of the hospital attended, nearly a record gathering. Diners were grouped at small tables and speeches were cut down to a minimum. After the loyal toast, Mr. W. C. Bridgeman, First Lord of the Admiralty, proposed the Hospital and Medical School. He contrasted the difficulties of the medical profession with those of politicians, inferring that, if anything, the doctor had rather the better of it. Some of the general practitioners present appeared to be not quite sure that this was really the case. Dr. James Torrens, Dean of the Medical School, in responding to the toast spoke hopefully of the future of the School, and announced that the entry this year was the highest since 1899. Sir Humphry Rolleston and Sir George Turner were toasted by the company and briefly responded. The success of the evening was largely due to the work of the secretaries, Mr. G. A. Ewart, Dr. Bellingham-Smith and Dr. Gilbert Orme.

The annual dinner of the old students of the *London Hospital* was held on Oct. 1st at the Trocadero Restaurant. The chair was taken by Sir Hugh Rigby, senior surgeon to the hospital, and nearly 200 old students were present. The Chairman congratulated the hospital on its great and increasing prosperity. The school, he said, showed no signs of birth control, and though labour might sometimes be difficult her sons were more numerous than ever, and as devoted as ever to the mother who gave them birth. Financially, thanks to the wizard hand of Lord Knutsford, the hospital had never been more prosperous, and the appreciation which laymen felt for its work was well illustrated by the generous gifts of £10,000 each from Lord Bearsted and Mr. Barron for a clinical theatre and a pathological laboratory respectively, as well as by the latest gift of £50,000 from an anonymous donor for research. With the development of the medical unit, of the system of annex hospitals, and of changes in the organisation of the receiving room and the out-patient department, many old traditions were passing away, but he hoped that nothing would ever be done to disturb the responsibility with which the residents were entrusted, to which we so largely owed the splendid type of practitioner whom everyone associated with the hall-mark of the London Hospital. Team-work was the great demand of the present day, but nowhere could be found a more united or a more devoted team than the past and present students of the hospital which he and his audience were proud to own as their mother.

The annual dinner of *St. Mary's Hospital Medical School* was held on Oct. 5th in the Connaught Rooms, Mr. Leslie Paton in the chair. A large gathering of St. Mary's men and women and their guests was present. In proposing the toast of the school, the chairman said that a teaching hospital filled three important functions: first, the healing of patients; second, research; and third, the teaching of students. It was the third function that was the most vital; no research work was so good as that which was constantly clarified by teaching it to others, and clinical work by being constantly and critically watched by students was benefited greatly. Mr. Paton then paid a feeling tribute to the late Sir Anderson Critchett. Mr. A. R. Prideaux, chairman of the Hospital Board, spoke in reply of the hospital's finances. The past year showed a deficit of £3000, but the prospects for the coming year were more encouraging. A gift of £2000 had recently been received for the purchase of radium, and a further £2000 had been given anonymously. The National Sporting Club had contributed over £6000 annually as the proceeds of boxing tournaments. Dr. C. M. Wilson, Dean of the School, who also replied, explained how the expenditure of the school had increased out of all proportion to the pre-war income from students' fees. The prestige of the school to-day was higher than it had ever been, and he had a very sensitive barometer for estimating that prestige. On the athletic side also the school record was a brilliant one. The health of the chairman was proposed in a humorous speech by Dr. R. H. Miller, and Mr. Paton replied.

The annual dinner of the past and present students of the *Middlesex Hospital* was held at the New Criterion Restaurant at 7.30 P.M. on Oct. 1st. The chair was occupied by Sir Arnold Lawson, ophthalmic surgeon to the hospital. There was a large gathering of the past and present students and their friends, numbering in all about 250. Among the guests were the Hon. Sir Arthur Lawley, Prof. E. A. Gardner, and the Mayor of Marylebone. After the usual loyal toasts, the Chairman proposed prosperity to the Middlesex Hospital and its medical school. He referred to the arrangements being made to carry on the work of the hospital during the rebuilding, to the efforts in train to raise the necessary funds, and to the satisfactory response so far obtained, thanks to the help afforded by the various agencies concerned, including the press, the various committees, the students, and the nurses. He announced that the efforts of the past students and present together so far had realised £4000. Mr. Reginald Beddington replied on behalf of the board. He alluded to the arrangements made to supply accommodation for patients during the rebuilding and stated that they would not involve the loss of a single bed. Mr. Eric Pearce Gould, the Dean, replied for the school. He paid a generous tribute to the work of his predecessor, Mr. A. E. Webb-Johnson. He referred with great satisfaction to the developments in the school during the past year, notably to the appointment of Prof. E. C. Dodds to the University chair of biochemistry, and to the generous gift of a large sum for the study of laryngology and otology from Mr. T. Ferens. Dr. T. L. Hardy, of Birmingham, replied on behalf of the past students, and referred with pride to the reputation of his old school. Mr. E. W. Riches, the Broderip Scholar, made a witty and amusing speech in replying for the present students. The toast of the Guests was proposed by Mr. Sampson Handley, and responded to by Sir Arthur Lawley and Prof. Gardner. The toast of the Chairman was proposed by Dr. R. A. Young. Sir Arnold Lawson replied, expressing his gratification at the large attendance.

The annual dinner of past and present students of the *Westminster Hospital* was held on Oct. 1st in Oddenino's Restaurant, Regent-street. Dr. H. B. Brackenbury was in the chair. The toast of Westminster Hospital students, past and present, was given by the Chairman, who said that he thought of all those who were there that evening as present students; past students could only refer to those who had passed away. A student of Westminster Hospital remained a student throughout his life, still learning from the work which went on there. He had, he said, in special memory many who had now passed away after doing excellent work, and also the actual students of to-day who were faced with new and difficult problems. The toast was responded to by Dr. Charles Roper on behalf of the old students, and Mr. R. G. Hodges made a happy and skilful speech for the younger generation. Mr. E. Rock Carling proposed the toast of the Chairman. For the remainder of the evening the ratio of songs to speeches was judiciously balanced, and the function was a very enjoyable one.

CHELSEA CLINICAL SOCIETY.—The annual dinner of this society will be held at the Café Royal, Regent-street, on Tuesday, Oct. 20th, at 7 for 7.30 P.M. Dr. P. Seymour Price, president, will be in the chair.

UNIVERSITY COLLEGE HOSPITAL DINNER.—The annual dinner of past and present students of University College Hospital will be held at the Hotel Cecil, Strand, on Friday, Oct. 16th, at 7.30 P.M., with Dr. Herbert Spencer in the chair.

PRINCE OF WALES'S GENERAL HOSPITAL: REUNION ASSOCIATION.—The annual dinner usually held during "motor week" will this year take place early in November. Members will be notified in due course of the actual date and place.

HARVEIAN SOCIETY OF LONDON.—A clinical meeting of the Society will be held at the Hospital for Epilepsy and Nerve Diseases, Maida Vale, on Thursday, Oct. 15th, at 4.30 P.M.

SOCIETY OF SUPERINTENDENTS OF TUBERCULOSIS INSTITUTIONS.—A meeting of the Society will be held at 122, Harley-street, on Monday, Oct. 19th, at 3 P.M. Papers will be read by Dr. J. W. Linnell on Some Reflections on the Diagnosis and Treatment of Tuberculosis, and by Dr. F. R. Walters on Needs and Indications in Pulmonary Tuberculosis.

PEOPLE'S LEAGUE OF HEALTH.—The first of the Sims Woodhead series of constructive educational health lectures under the auspices of the League will be delivered to-day (Friday) by Prof. Pembrey on Elementary Anatomy and Physiology in the Fyvie Hall, Regent-street Polytechnic, Regent-street, W., at 6 P.M.

MEDICAL DEFENCE UNION.—At a meeting of the Council of the Medical Defence Union, Ltd., held on Oct. 1st, Sir Herbert Waterhouse, consulting surgeon to Charing Cross Hospital, was appointed president of the Union for the ensuing year, in room of Mr. W. G. Spencer, retired.

ROYAL SOCIETY OF ARTS.—On Monday, Nov. 9th, a conference will be held at the house of the society, John-street, Adelphi, W.C., on How the Midwife can Help in the Reduction of Maternal and Infantile Mortality. The chair will be taken by Sir Francis Champneys, Bt. The speakers will include Dr. John S. Fairbairn, Miss E. M. Doubleday, Lieut.-Colonel Fremantle, and Sir John Robertson.

MEDICAL SOCIETY OF LONDON.—The programme for the first half of the session 1925–26 opens with the annual general meeting at the House of the Society, 11, Chandos-street, W., on Monday, Oct. 12th, at 8 P.M. At 8.30 P.M. Sir Holburt J. Waring will deliver his presidential address on Osteopathy, Chiropractic, and Medicine. The following meetings will also be held on Mondays, at 8.30 P.M.: Oct. 26th, clinical evening, exhibition of cases and skiagrams; Nov. 9th, discussion on Obscure Pyrexia in Childhood, to be introduced by Dr. Robert Hutchison; Nov. 23rd, clinical evening; Dec. 14th, discussion on the Treatment of Genito-Urinary Tuberculosis, to be introduced by Mr. Cyril A. R. Nitch.—The Lettsomian Lectures on the Principles of Treatment in Relation to Diseases of the Nervous System will be delivered on Monday, Feb. 15th, Wednesday, Feb. 24th, and Monday, March 15th, 1926, by Dr. E. Farquhar Buzzard.—The annual oration

will be delivered in May, 1926, by Sir Berkeley Moynihan. —The Lloyd Roberts Lecture on Man's Structural Defects will be given on Monday, Nov. 16th, at 5.30 P.M., at the Royal Society of Medicine by Sir Arthur Keith.

Dr. Addison has been adopted as prospective Labour candidate for the Swindon Parliamentary Division.

THE annual service of the Guild of St. Luke, Evangelist and Physician, will be held on St. Luke's Day, Oct. 18th, at 6.30 P.M., at Westminster Abbey.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The first meeting of the seventieth session will be held to-day (Friday) in the Board Room of the Miller General Hospital, Greenwich, S.E., at 8.45 P.M., when the officers and council for the ensuing year will be elected. Dr. H. S. Knight, the President, will occupy the chair. Clinical cases will be shown by several members.

UNIVERSITY OF BRISTOL.—In a special Final Examination for the degrees of M.B., Ch.B. (Part II.), held recently, the following candidates were successful in public health only (completing examination): Charles T. Hyatt and Hubert J. Satchwell.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the monthly meeting of the Faculty, held on Oct. 5th, George Lynn Pillans, M.C., L.R.C.P., L.R.C.S. Edin., L.R.F.P.S. Glasg., was admitted, after examination, as a Fellow of Faculty.

MANCHESTER BABIES' HOSPITAL.—The new buildings will be opened by the Earl of Derby on Monday, Oct. 19th, at 3 P.M.

THE LATE DR. WILLIAM SANG.—Dr. Sang, who died recently at his residence in Dundee, at the age of 80 years, was a native of that city. He retired from practice only three years ago owing to ill-health. He graduated at Edinburgh University in medicine and surgery in 1871, proceeding to the M.D. degree in 1884. He had contributed several papers on medical subjects to medical journals, among them being one, in 1891, on a case of accidental poisoning by Epsom salts.

ROYAL INSTITUTE OF PUBLIC HEALTH.—A course of lectures on Preventable Diseases will be delivered in the Lecture Hall of the Institute, 37, Russell-square, London, W.C. 1, on Wednesdays, Oct. 14th to Dec. 16th, at 4 P.M. The first lecture will be delivered (on Oct. 14th) by Colonel S. Lyle Cummins on the Prevention and Arrest of Tuberculosis. Lieut.-Colonel Cuthbert James will be in the chair. These lectures, whilst intended primarily for the Fellows and members of the Institute, all others, men and women interested in medico-sociological problems, are cordially invited to attend. The Harben lectures will be given by Prof. J. C. G. Ledingham on Current Problems in Bacteriology and Immunology, and their bearing on Public Health Effort, on Dec. 9th, 10th, and 11th, at 5 P.M. Copies of the syllabus may be obtained from Dr. E. W. Hope and Dr. T. N. Kelynack, hon. secretaries, at the Institute.

SURGICAL INSTRUMENT MANUFACTURERS' ASSOCIATION, INC.—The annual dinner of this Association, which is affiliated to the National Union of Manufacturers, was held on Friday, Oct. 2nd, at the Holborn Restaurant, Kingsway, Mr. Ernest W. Mayer being in the chair. The toast of the Association was proposed by Mr. H. E. Curtis, who gave a short résumé of its history. The Association, he said, was a war-time product, due to the thought of Mr. Edwin Arnold, who, in 1917, brought, by its foundation, the members of the surgical instrument trade together. The first President was Mr. Down under whose able guidance the Association had flourished exceedingly. Mr. Godfrey Cheesman, general secretary of the National Union of Manufacturers and former secretary of the Association, in response to the toast, said that it should be incumbent on public spending bodies to buy British goods, and gave some instances where certain communities had transgressed in this respect. He referred to the spirit of amity and coöperation that existed in the Association, and salted his remarks with several amusing anecdotes. Colonel A. Young, C.B.E., proposed the Guests in a humorous speech, and Sir W. Arbuthnot Lane, in reply, paid a tribute to the superiority of British surgical instruments. "Surgeons don't realise," he said, "how much they owe to the surgical instrument makers." "The Chairman" was proposed by Mr. W. T. R. Beckett, and Mr. Mayer replied. During the evening a pleasant programme of music and song was dispensed by Miss Ethel Kemish, Miss Blanche Gaston Murray, Mr. George Webber, and Mr. Hector Gordon.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

Monday, Oct. 12th.

WAR: at 5 P.M.
Presidential Address:
Lt.-Gen. Sir William Leishman (Director-General, A.M.S.): Research in the Medical Services.

Tuesday, Oct. 13th.

THERAPEUTICS AND PHARMACOLOGY: at 5 P.M.
Discussion on
Some Difficulties in the Use of Insulin, to be opened by Dr. George Graham (President).
The following have also promised to contribute:
Prof. H. MacLean, Dr. R. D. Lawrence, Dr. E. P. Poulton, Dr. G. A. Harrison.

Thursday, Oct. 15th.

DERMATOLOGY: at 5 P.M. (Cases at 4 P.M.)
Cases:
Dr. J. H. Sequeira: (1) A Private Case for Diagnosis. (2) Kaposi's Multiple Pigment Sarcoma.
Dr. A. C. Roxburgh: Lupus Erythematosus.
Other cases will be shown.

Friday, Oct. 16th.

ELECTRO-THERAPEUTICS: at 8.30 P.M.
Presidential Address:
Dr. Alastair MacGregor: Then and Now.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Oct. 12th.—8 P.M., Annual General Meeting. 8.30 P.M., Ordinary Meeting. The President's address on Osteopathy, Chiropractic, and Medicine, by Sir Holburt J. Waring, to be followed by a discussion.

BIOCHEMICAL SOCIETY (Biochemical Department, Cambridge).

SATURDAY, Oct. 10th.—3 P.M., Dorothy Needham and J. Needham: The Micro-Injection of pH and rH Indicators. G. S. Lund and C. G. L. Wolf: The Fermentable Sugar in Blood. F. G. Hopkins: An Oxidation of Proteins promoted by Glutathione. Mrs. H. J. Coombs and Marjory Stephenson: The Gravimetric Estimation of Bacterial Growth. L. J. Harris: Extension of the Principles of Acidimetry. Application to Certain Biochemical Problems: (*a*) Analysis of Amino-acid Mixtures; (*b*) Volumetric Estimation of Casein and other Proteins; (*c*) The Rationale and Prediction of Protein Behaviour; (*d*) Polypeptides; (*e*) Insulin. H. F. Holden: The Estimation of Glucose. C. S. Hicks: The Effect of a Tryptophane-Free Diet on the Thyroid Gland of the Rat, with Studies in Heat Production. C. S. Hicks: The Ultra-Violet Absorption Spectrum of Acetyl-Thyroxin. C. S. Hicks and M. L. Mitchell: A Preliminary Report of the Study of Induced Polyuria in Rats. H. W. Dudley and W. V. Thorpe: A Synthesis of N-methylputrescine and of Putrescine. J. B. S. Haldane: The Effect of Diuresis on Purin Metabolism. H. J. Channon and J. C. Drummond: Feeding Experiments with Spinacene.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

THURSDAY, Oct. 15th.—8.15 P.M., Opening Meeting of Session. Dr. Andrew Balfour, C.B., C.M.G., President: Inaugural Address on Some of Our Pioneers, illustrated by lantern slides. The meeting will be preceded at 7.45 P.M. by an exhibition of some interesting works on tropical medicine and hygiene dating from the middle of the eighteenth century onwards.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

THE FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Oct. 12th, to SATURDAY, Oct. 17th.—COMBINED CHILDREN'S COURSE, Paddington Green, Victoria Hospitals, and Children's Clinic. Morning and afternoon sessions.—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road. Special course in Laryngology, Rhinology, and Otology. Clinical course and Operative Surgery course, of which one or both may be taken.—LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Endsleigh-gardens. Tuesday and Thursday, clinical demonstration by Dr. G. C. Low and Dr. P. Manson-Bahr at 2 P.M. The subjects considered will be the more important diseases of tropical countries, illustrated by cases in hospital.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.

POST-GRADUATE COURSE: OCTOBER-NOVEMBER, 1925.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, Oct. 12th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Paraplegia and Its Treatment: Dr. Riddoch.

TUESDAY, Oct. 13th.—2 P.M., Out-patient Clinic: Dr. Walshe. 3.30 P.M., Epilepsy: Dr. Adie.

THURSDAY, Oct. 15th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Syringomyelia: Dr. Martin.

FRIDAY, Oct. 16th.—2 P.M., Out-patient Clinic: Dr. Adie. 3.30 P.M., Acoustic Nerve Tumours: Mr. Sargent.

The fee for the Course, including Pathology lectures, is £5 5s. For those who hold Perpetual Tickets the fee is £3 3s.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.

THURSDAY, Oct. 15th.—12 noon, Neuroglial Reaction: Dr. J. G. Greenfield.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM.

MONDAY, Oct. 12th.—12 noon, (*a*) The Peripheral Nervous System, (*b*) Spinal Cord: Dr. J. L. Birley.

Dr. H. J. Macbride will give a COURSE of EIGHT CLINICAL DEMONSTRATIONS, chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays, if sufficient entries are received. The fee for this Course will be £2 2s. (commencing Tuesday, Oct. 20th).

Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 o'clock, or at such other times as may be announced.

Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course.

Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.

J. G. GREENFIELD, Dean of Medical School.

UNIVERSITY COLLEGE, London.

MONDAY, Oct. 12th.—5 P.M., Mr. R. J. Lythgoe: The Physiology of Hearing and Vision (first of a course of eight public lectures).

WEDNESDAY.—5 P.M., Second lecture.

ST. JOHN'S HOSPITAL, 49, Leicester-square, W.C.

TUESDAY, Oct. 13th.—5 P.M., Dr. A. C. Roxburgh: Eruptions due to Physical Causes.

THURSDAY.—5 P.M., Dr. R. F. Fagan: Pathological Demonstration.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.

WEDNESDAY, Oct. 14th.—4 P.M., Colonel S. Lyle Cummins: The Prevention and Arrest of Tuberculosis.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

THURSDAY, Oct. 15th.—3 P.M., Mr. Norman Fleming: Demonstration of Fundus Cases. 4.30 P.M., Mr. Aubrey Goodwin: Lecture, Treatment of Vaginal Discharges.

Daily: In-patient and Out-patient Clinics in General and Special Departments, Operations, &c.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, Oct. 15th.—4 P.M., Mr. Fairbank: Spinal Caries.

ANCOATS HOSPITAL POST-GRADUATE LECTURES.

THURSDAY, Oct. 15th.—4.15 P.M., Mr. E. E. Hughes: The Significance of Urinary Symptoms.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES.

TUESDAY. Oct. 13th.—4.15 P.M., Mr. D. L. Sewell: Chronic Empyema of the Maxillary Antrum.

FRIDAY.—4.15 P.M., Dr. A. McDougall: A Point of Moment in the Treatment of Epilepsy.

Appointments.

DUNCAN, A. G. B., M.D.Aberd., D.P.H., has been appointed Medical Officer of Health, Kidsgrove Urban District.

ELLIOTT, G. M., M.B., Ch.B. Edin., Medical Officer of Health for the County of Selkirk and the burghs of Galashiels and School Medical Officer.

WHYTE, A. H., M.B., B.S. Durh., F.R.C.S. Eng. & Edin., Hon. Assistant Surgeon to the Royal Victoria Infirmary, Newcastle-upon-Tyne.

WILSON, E. A., M.D. Edin., Junior Assistant Medical Officer, Cheshire County Mental Hospital.

National Hospital for Diseases of the Heart: TROTTER, W., M.D., M.S. Lond., F.R.C.S. Eng., Consulting Surgeon; CLEMINSON, F. J., M.Ch. Camb., F.R.C.S. Eng., Consulting Surgeon for Diseases of the Ear, Nose, and Throat.

Vacancies.

For further information refer to the advertisement columns.

Barry Urban District Council.—H.S. at rate of £200.

Birmingham, City Mental Hospital.—Asst. M.O. £350.

Cambridge, Addenbrooke's Hospital.—Cas. O. and Res. Anæsthetist. At rate of £130.

Cambridgeshire Tuberculosis Colony, Papworth.—H.P. At rate of £100.

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Hon. Asst. Out-patient Registrar.

Colwyn Bay and Colwyn Urban District Council.—M.O.H., &c £800.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—H.P. At rate of £125.

Farringdon General Dispensary, Holborn-circus, E.C.—Surg. for Throat, Nose, and Ear Dept.

Greenwich, Dreadnought Hospital.—S. in charge of Out-patients.

Guy's Hospital, S.E.—Salomon's Infant Welfare Centre. M.O. 1½ guineas per session.

Holland County and Boston Borough Education Committee.—Dent. S. £450.

Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—H.P. At rate of £50.

Hospital of St. John and St. Elizabeth, 40, Grove End-road, N.W.—H.P. and H.S. At rate of £100 and £75 respectively.

Hull City Education Committee.—Asst. Sch. M.O. £600.

Ipswich Mental Hospital.—Asst. M.O. £300.

Liverpool, Brownlow Hill Infirmary.—M.O. £500. Also Asst. M.O. £200.

London Hospital, E.—First Asst. and Registrar. At rate of £200.

Manchester Royal Infirmary.—H.S. At rate of £50.

Metropolitan Hospital, Kingsland-road, E.—Sen. and Jun. H.P. Sen and Jun. H.S. Also Two Cas. O.'s. Each at rate of £100.

Middlesex County Council Committee for the Care of the Mentally Defective.—Asst. M.O. £600.

Miller General Hospital for South-East London, Greenwich-road, S.E.—Pathologist, £500, Asst. in Out-patient Dept. £150, and H.S. £125.

National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—Res. M.O. £200.

Newark Hospital and Dispensary.—Res. H.S.

Plymouth County Borough.—Asst. M.O.H. £750.

Plymouth, Didworthy Sanatorium, South Brent.—Res. M.O. £600.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Asst. S.

Royal Chest Hospital, City-road, E.C.—Phys. to Out-patients. £50.

Royal Northern Hospital, Holloway, N.—P.

St. Bartholomew's Hospital.—Asst. Ophth. S.

Seychelles Government.—Asst. M.O. and Res. S. Rs.6500.

Southend-on-Sea County Borough.—Asst. M.O. £600.

Wolverhampton and Staffordshire Hospital.—H.S. At rate of £150.

The Chief Inspector of Factories, Home Office, London, S.W., announces vacant appointments for Certifying Factory Surgeons at Yeovil (Somerset) and Whitchurch (Salop).

The Home Secretary gives notice that, in consequence of the resignation of Dr. E. le C. Lancaster, one of the Medical Referees under the Workmen's Compensation Act, 1906, for the District of the Neath and Port Talbot County Court (Circuit No. 31), the appointment held by him is vacant. Applications for the post should be addressed to the Private Secretary, Home Office, and should reach him not later than Oct. 28th.

Births, Marriages, and Deaths.

BIRTHS.

BOLTON.—On Sept. 30th, at Bedford Lodge, Belsize-grove, the wife of Dr. A. O. Bolton, of Leighton Buzzard, of a son.

GRAHAM.—On Sept. 20th, at Trimulgherry, India, to Major and Mrs. W. T. Graham, R.A.M.C.—a son.

ORAM.—On Oct. 4th, at Lee-terrace, Blackheath, the wife of E. H. B. Oram, F.R.C.S., of a son.

ORMEROD.—On Oct. 1st, 1925, to Mary (*née* Burton), the wife of Frank Cunliffe Ormerod, of 13, Welbeck-street, W. 1, and 39, Queensborough-terrace, W. 2.—a son.

MARRIAGES.

COLVILLE—BALL.—On Sept. 30th, at Havant, Hants, Oliver Colville, M.D., of Bedlington, Northumberland, and Bath, to Kathleen, only daughter of Mr. and Mrs. Ernest Ball, of St. Margaret's, Drayton, Cosham, Hants.

CUTHBERT—TAYLOR.—On Oct. 5th, at All Saints', Shooters' Hill, Captain Edmund Sheppard Cuthbert, R.A.M.C., to Annie Rose, elder daughter of Captain R. C. Taylor, R.H.A., (retd.), and Mrs. Taylor, of Plumstead.

FOOTE—ADAIR.—On Sept. 25th, at Holy Trinity Church, Sloane-street, S.W., Robert Rowden Foote, M.R.C.S., L.R.C.P. Lond., to Maureen, only daughter of Mr. and Mrs. G. E. R. Adair, Wellesley House, Lower Sloane-street.

HAMMOND-WILLIAMS—BARTON.—On Oct. 3rd, at the Parish Church of St. Mary, Acton, Douglas Shepherd Hammond-Williams, L.D.S. R.C.S. Eng., to Violet Nellie, youngest daughter of Mr. and Mrs. Edward A. Barton, of The Cottage, Woodhurst-road, Acton, and Laleham-on-Thames.

HILTON—HILL.—On Sept. 16th, Reginald Hilton, M.B., B.Ch., M.R.C.P., to Gwenda Hill, M.B., B.S.

HUDSON—ALLARD.—On Oct. 2nd, at All Saints' Church, Whitstable, Frank Hudson, F.R.C.S., to Christabel, eldest daughter of C. B. Allard, Tankerton, Kent, grand-daughter of the late W. Allard, F.R.C.S., Tewkesbury.

MINES—GORDON.—On Sept. 28th, at Sidbury Parish Church, Albert Gordon Austin Mines, R.A.M.C., to Marion Alice Gordon, youngest daughter of the late Alexander Hamilton Miller Haven Gordon, of Delamont, Killyleigh, Co. Down, Ireland, and Mrs. Gordon, of Ladymead, Sidford, Devon.

PROWSE—CRELLIN.—On Sept. 29th, at St. Mary's, Leigh Woods, David Crawford Prowse, M.B., M.R.C.S., to Dorothy Emily Crellin, M.B., M.R.C.S., younger daughter of the late John C. Crellin and Mrs. Crellin, of West Mall, Clifton (late of Hoylake, Cheshire).

ROGERS—GLASBROOK.—On Oct. 2nd, at All Souls', Langham-place, London, Herbert Rogers, M.B., Ch.B., to Margaret Iris, eldest daughter of Mr. and Mrs. David N. Glasbrook, of Bryn-y-Mor, Swansea.

DEATHS.

HUNT.—On Sept. 30th in London, Edmund Langley Hunt, C.M.G., L.R.C.S. & P.I., Superintending Medical Officer Jamaica. Funeral took place at Golders Green Crematorium on Oct. 3rd.

MANBY.—On Sept. 29th, at East Rudham, Norfolk, Sir Alan Reeve Manby, K.C.V.O., F.R.C.S., M.D., aged 77.

STARES.—On Sept. 28th, at The Limes, Swanley, Kent, Charles Lindsay Baker Stares, J.P., M.R.C.S. Eng., L.R.C.P. Lond.

VERNON.—On Feb. 12th, 1925, suddenly, at Montego Bay, Jamaica, Alexander Apfell Vernon, M.D. New York, M.R.C.S. Eng., L.R.C.P. Lond., aged 50 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE LANCET: SUBSCRIPTION RATES.

INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Subscriptions not paid in advance are charged out at the published price of 1s. per copy, plus postage. Cheques and P.O.'s (crossed "Westminster Bank, Ltd., Covent Garden Branch") should be made payable to THE MANAGER, THE LANCET Offices, 423, Strand, London, W.C. 2.

SMALL ADVERTISEMENT RATES.

Appointments (Public) Vacant Asylums and Homes Hotels, Boarding Houses, and Baths Books and Publications Houses and Estates Wanted and for Sale. Schools, Medical and Preparatory Nursing Institutes	Four lines and under, 6s.
Financial, Official, and other Announcements Tutors and Tutorships Trade and Miscellaneous Practices and Partnerships Situations Vacant and Wanted	Each additional line, 1s. 6d.

For complete scale of advertisement charges apply to the Manager.

Notes, Comments, and Abstracts.

THE LONDON MEDICAL EXHIBITION: A REPETITION IN LIVERPOOL.

BOTH in scope and variety the London Medical Exhibition which was opened at the Central Hall, Westminster, on Oct. 5th and which closes to-day (Friday, Oct. 9th), is perhaps the most important of the many that have been organised since 1905. The attendance has been large; it has included appreciative visitors from London, the home counties, and the Midlands, and a fair number of medical men from overseas at present visiting this country. The success of these exhibitions is shown by the demand for a similar display more conveniently situated for medical men in the North of England, and to meet this demand a medical exhibition, similar to the London one, will be opened at the Philharmonic Hall, Liverpool, on Tuesday, Nov. 24th, for four days, closing on Nov. 27th. The London office of this new enterprise is the British and Colonial Druggist, Ltd., 194–200, Bishopsgate, E.C. At the London exhibition practically every branch of medical treatment receives recognition in some form, and both drugs and surgical instruments in their latest adaptation to progressive medicine and surgery find a place. Particularly noticeable is the large number of iodine and liquid paraffin preparations; the popularity of electro-therapeutic treatment is indicated by a variety of apparatus, and in this category may be included light treatment by means of quartz and other lamps. Another prominent feature of the exhibition is the obvious effort of the manufacturers of drugs to present them in a form pleasing to the eye as well as to the taste. The organisers are certainly to be congratulated upon the success of the exhibition no less than upon the production of the "London Medical Brochure," which is given away to visitors. This is a list of special medicines with their composition, therapeutic uses, and the name of the maker or supplier, and forms a ready guide for medical men who wish to try some of the newer remedies for particular diseases. A detailed account of the exhibition will appear in our columns next week.

INTERNATIONAL HEALTH ORGANISATIONS.

THE prevention of disease as an international problem is now accepted as a commonplace, but international health organisations are of comparatively recent growth, and even the word international, now so familiar, only dates from 1780 when it was coined by Jeremy Bentham. International organisations trace their origin in the first place probably to trade, soon followed by intellectual and artistic exchange between nations, and they were also undoubtedly influenced by widespread religious interests as seen in the early Church Councils and in the Crusades. The earliest international congresses were of a scientific nature, the first of these being held in Germany in 1823, and it was not until 1864 that an association between nations for a common end took shape in the International Geodesic Association, which had as its object the accurate measurement of the earth. In 1851 the first international sanitary conference was held in Paris and prepared a draft convention which was never ratified, but from that time forwards the gradual development of the international aspect of public health took place until at the present day there are three important organisations concerned with this—the Office International d'Hygiène Publique, the Pan-American Sanitary Bureau of the American Republics, and the Health Organisation of the League of Nations, including both the Health Committee and certain divisions of the International Labour Office. A recent issue of Public Health Reports[1] from Washington contains an historical review of these organisations and traces their evolution up to their present-day established position.

After the First International Sanitary Conference of 1851, succeeding conferences were held in a spasmodic fashion until, in 1903, the Italian Government proposed a conference in Paris for the purpose of collecting into one agreement the existing conventions, and it was at this meeting that the Office International d'Hygiène Publique was created. An agreement between the powers was drawn up and signed at Rome in 1907, providing for the establishment of head-quarters, funds, and staff, for the issuing of a monthly bulletin, and for a permanent committee which should meet once a year. The permanent committee met first in April, 1909, and but for the years of the war has continued to hold regular sessions each year. It has carried out important work; for example, with regard to plague, tuberculosis, Malta fever, water-supplies, and the standardisation of serums and other biological products, while the monthly

[1] Washington, Public Health Reports, xl., No. 34, August 21st, 1925.

bulletin, published without interruption since January, 1909, contains valuable epidemiological reports and tables, abstracts of articles on subjects pertaining to public health, and bibliographies on similar subjects.

By the Covenant of the League of Nations the authority was given for an international health organisation under the direction of the League. The Office International d'Hygiène Publique found itself unable to participate in the activities of the League owing to certain important provisions in its organic by-laws, but to avoid the difficulties of a dual organisation an arrangement was made in 1923 whereby the International Office retains its regulations, powers, and its seat in Paris, and acts as the Consultative Council to the Health Organisation of the League, which consists in addition of a permanent health committee and a health section of the secretariat with its headquarters at Geneva. The League by means of this organisation has carried out a great amount of work, including, for example, the fighting of the typhus fever epidemic in Poland and Russia, an epidemic commission in Greece, and other preventive work in the Near East, while the standardisation of biological products and the interchange of public health officials by providing courses of "travel studies" are other important developments. The health section of the Secretariat of the League, under the direction of Dr. Ludwik Rajchman, is the executive organ of the Health Committee, and besides the work described above is responsible for issuing valuable epidemiological reports. The International Labour Office, an autonomous organisation within the League of Nations, has a division of industrial hygiene which has collected and published much information in regard to this subject, and has set up certain advisory committees, one of which on anthrax has made valuable contributions to the problem of combating this disease. Mention may here be made of the League of Red Cross Societies, an association of National Red Cross Societies founded in 1919, and now comprising 54 members, which maintains a permanent secretariat in Paris and does valuable work in close coöperation with the official international organisations by distributing propaganda on health matters throughout the world as well as carrying out courses in London for nurses from many different countries. It possesses a very fine collection of pamphlets, posters, booklets, and films on health matters, and forms an important link between the official bodies and the public.

The Pan-American Sanitary Bureau is the outgrowth of a series of international conferences of North and South American States which date back over a hundred years, and largely with a view to combating the ravages of such diseases as cholera and yellow fever at the sea ports the United States summoned an international conference to meet at Washington in 1881. This was followed in 1889 by a conference of American States at which every American Republic was represented, and where, among other questions, the subject of ship sanitation and quarantine was discussed. At the second conference of the American States in 1901–02 the International Sanitary Bureau of the American Republics was created, its name being changed in 1923 to the Pan-American Sanitary Bureau. Since its foundation this bureau, which is a permanent executive board with its headquarters at Washington, has been responsible for collecting and distributing information on public health matters, for giving expert assistance in the fighting of outbreaks of epidemic disorders, and generally carrying out the resolutions of the seven international conferences of the American States which it has organised since 1902.

COLONIAL HEALTH REPORTS.

Ashanti.

IN his report for 1923–24 Mr. John Maxwell, C.M.G., the Chief Commissioner, states that there were four deaths and five cases of invaliding of Europeans during the year under review, two of the deaths and two of the cases of invaliding being due to blackwater fever. The admissions to the European Hospital numbered 113, as compared with 194 during the previous year and 172 for 1921. The admissions to the Native Hospital numbered 1972, whilst 15,564 out-patients were treated during the year. These cases were of the usual kind, venereal disease, yaws, pulmonary affections, ulcer, and malaria being the most common. There was no epidemic throughout the year, and the health of the inhabitants was generally good. The sanitation of the towns (except Kumasi) and villages was satisfactory. With the opening up of the country by motor roads new villages adjacent to the roads have been built and the old villages distant from the roads have been deserted. This forward movement is particularly noticeable in the western province and is an extremely satisfactory condition of affairs. It indicates greater trust by the Ashanti in the protection of life and property which the administration affords, and also indicates that the Ashanti is fully alive to the greater possibilities of disposing of his products to travellers and others. These new villages, with the help of the political and sanitary officers, are all carefully laid out with fine broad streets, open spaces, and sanitary utilities. Kumasi, Obuasi, Bekwai, Juaso, Kintampo, and Sunyani are the principal towns, and the sanitation of these towns is under European and African officers. The population at the census of 1921 was 406,193, that of Kumasi, the chief town, at the end of the year being approximately 27,000. The town limits are a radius of one and a half miles from the fort and there are buildings scattered all over this area. The usual preventive measures were taken against insect-borne disease, including malaria, yellow fever, filariasis, infectious and epidemic diseases. There was, unfortunately, no improvement in the quality of the Kumasi water-supply, which is badly polluted by the presence of *B. coli*. There were no cases of cerebro-spinal meningitis, cholera, enteric fever, small-pox, or plague. The rainfall recorded at Kumasi during the year was 59·240 inches. Investigations have been made at Chebbi, near Nsuta, as to its suitability for a site for a sanatorium for the Gold Coast in accordance with the Secretary of State's suggestion. The situation is ideal and water-supply appears to be good and plentiful. It is 1200 feet above sea-level and is within two hours by motor from Kumasi, the road being good, except for the last three miles.

Grenada.

Mr. Herbert Ferguson, Colonial Secretary, in his annual report, states that the death-rate for 1923 (16·6 per 1000) is the lowest recorded in the annals of the colony. The number of deaths from dysentery decreased from 83 to 33, and from diarrhœa and enteritis from 329 to 283. Deaths from malaria were also fewer, being 74, as compared with 83 in the previous year. The population at the last census was 66,302. The Registrar-General points out "that the low death-rate coincided with a year of deficient rainfall, the latter having been 55·72 inches at Richmond Hill in St. George's, as compared with the average of 74·38 inches for the past 30 years. An examination of death-rate in relation to volume of rainfall over the past 20 years does not reveal any striking relativity between the two. As a rule a low rate of rainfall is supposed to accompany a decrease in the death-rate, but this is not invariably the case. A prolonged dry season followed by a short spell of heavy rains often leads to an outbreak of dysentery, diarrhœa, and enteritis, and thus, while the annual rainfall may be low, a corresponding reduction in the death-rate does not always follow. Last year there was no distinct spell of dry season, nor of heavy rainfall at any time, the latter being well distributed over each month. It is this equable distribution of rainfall throughout the year that has contributed to the low mortality."

Grenada, situated in the extreme south of the Caribbean Sea, is the nearest British island to the mainland of South America, with the exception of Trinidad and Tobago. The island is about 21 miles in length and about 12 miles in its greatest breadth. Its area is about 120 square miles, but including Carriacou, an island in the north, the area of the colony is 133 square miles. Grenada is mountainous and well watered by streams. St. George's Harbour, land-locked and deep-watered, is one of the most beautiful in the West Indies. There are two small lakes formed in extinct craters, one called the Grand Etang, being situated near the centre of the island 1740 feet above sea-level, while the other, Lake Antoine, is near the sea on the eastern coast. A sanatorium is established near the former. The climate can be classed as excellent, especially from December to May, when it is delightful. The range of temperature is small and tends to make the climate equable and healthy. The thermometer seldom reaches 90° F. in the shade or drops below 70°.

St. Helena.

In his annual report on the affairs of this colony the Governor mentions that the civil population on Dec. 31st, 1924, was estimated at 3703, an increase of 43 over that of the previous year. The death-rate was 10·23 per 1000, compared with 7·66 in 1923. The number of births was 106 (not including four stillborn), as against 114 (and two stillborn) in the preceding year. The infant mortality was large, 11 out of the 38 deaths being under the age of 1 year. No specific reason can be assigned for this, the deaths being all from what might be termed natural causes in very young children. A mild epidemic of influenza was prevalent in the months of February and March, but there was no appreciable rise in the death-rate on that account. On the whole, the general health of the colony during the year was good; 169 persons were admitted to the hospital, being eight less than in the previous year. There were three deaths. The average number of indoor patients was ten. The mean temperature was 60·3° F., as compared with 62·0° in 1923. The total rainfall recorded at Hutts Gate for the year was 33·160 inches as against 45·740 in 1923.

THE NEWSVENDORS' BENEVOLENT AND PROVIDENT INSTITUTION.

THE annual dinner will be held at the Hotel Cecil, London, on Nov. 3rd, and Mr. Frederick Lawson, writing from the office of the *Daily Telegraph*, points out that the newsvendor works early and late that the public may be provided with their newspapers, while it is the purpose of the institution to provide on their behalf for pensions in old age or incapacity, or grants and other assistance to members, their widows, and orphans who may be in temporary difficulties. "Many newsvendors," he writes, "have only too little opportunity for providing for illness or old age, and the institution gives to those members of the public to whom the newsvendors render a daily service an opportunity to give their thanks in return." The funds of the Newsvendors' Institution, which was established in 1839, are carefully administered. There are at present 68 pensioners, whose welfare is constantly borne in mind. Sick parents are sent to convalescent homes, orphan children are cared for in selected institutions, and financial help is given in cases of need. Mr. Lawson is chairman for the year, and will be glad of offers from ladies and gentlemen willing to assist as stewards.

THE "EUPHOROS" SELF-ADJUSTING ARM-SLING.

IN appearance this sling is similar to the common form of support constructed from a folded handkerchief, but instead of being suspended from the back of the neck, the "Euphoros" is kept in position by straps passing over the shoulders and attached to a waistband, as is clearly shown in the accompanying illustrations, and

The "Euphoros."

the patient is thus relieved of any sense of carrying weight. One of the illustrations also shows that the back piece is curved so as to avoid the shoulder-blades, and this part of the sling, together with the belt, may be worn either under or over the coat. The sling is attached by buckles to the bands passing over the shoulders, thus making adjustment quite easy to the wearer; and a gusset at the elbow obviates the necessity for safety-pins and gives greater freedom to the arm. The "Euphoros," adaptable to the right or left arm, is made of a strong, light and durable black material, and is extremely comfortable to wear. Its merits certainly commend it, and it might well find a place in the emergency cupboard of every household. Messrs. Squire and Son, Ltd., 413, Oxford-street, London, are the agents for its sale.

A FAMOUS SANITARY COMPANY.

THIS bright little book[1] tells how the City of London Sanitary Company was formed in 1908, of its regular service thereafter in autumn manœuvres, and of its personnel when the war broke out. On August 4th, 1914, there were two officers and 59 N.C.O.'s and men, and the numbers steadily grew to 80 officers and 1500 men overseas. Only men with sanitary knowledge or good education were taken, many of them obtained by advertisement in sanitary journals; there were sanitary inspectors, surveyors, builders' foremen, linguists, graduates in science, and others. Headquarters were at Chelsea, and scientific institutions in the neighbourhood freely helped. The men were taught about bacteriology, the causes of disease, the disposal of night soil, disinfection, the care of water and meat, and when trained they were fit to be N.C.O.'s. They were also taught to cook. In one respect they had good fortune, for their Q.M.S. was a professional caterer, and fed them well for a shilling a day, so that the mess fund, started by a gratuity of £50, got them equipment for instruction and recreation, a company magazine, rail tickets to go out of London for route marches, and ultimately, when the company was broken up, £500 to endow a memorial bed at the Westminster Hospital. After November, 1914, every British division had a sanitary section with it. The first duties overseas were supervision of the units, themselves responsible for the sanitation of their areas, but needing advice. The duty of the sections was to point out deficiencies, their privilege to help in putting them right, and tact generally got this done smoothly. Water analysis and chlorination, disinfection, baths and washhouses were special activities of the sections, nuisances and flies their great preoccupations. In 1917 men of no education were drafted into the company, but many of them proved to be useless or worse. There is a story of an infantry private who drank unapproved water, having first made German prisoners drink it, "and ye see they're all right." The book should be read by officers of sanitary companies and by all who expect to join them on mobilisation.

[1] The History of the First London (City of London) Sanitary Company, R.A.M.C. (T.) Edited by G. W. Foster, The Laurels, North Kelsey, Lincoln. With ten illustrations. Pp. 114. 2s. 6d.

SUGAR AND ATHLETICS: A SHAKSPEARIAN ALLUSION.

To the Editor of THE LANCET.

SIR,—The Harvard Marathonians, in your leading article of Sept. 19th, found that eating candies was very reviving when exhaustion began to appear. They might have remembered Prince Hal's remark to Falstaff (*King Henry IV.*, Part I., Act iii., Scene 3): "If there were anything in thy pocket but tavern-reckonings, memorandums of bawdy-houses, and one poor penny-worth of sugar-candy *to make thee long-winded.*"—I am, Sir, yours faithfully,

M.A., B.Sc. St. And.

NURSERY PSYCHOLOGY.

THE National League for Health, Maternity and Child Welfare (117, Piccadilly) has issued a pamphlet entitled, "Every-day Psychology in the Nursery," being a selection from courses of lectures recently delivered by physicians and others under the auspices of the National Society of Day Nurseries. The six lectures reprinted in this book deal with various psychological subjects, including the use and abuse of suggestion with children, sex education, the part played by diet in the psychology of the child, and the children's evening hour. Each of these essays is good and practical, and should prove stimulating to all engaged in the training and care of children.

A NATIONAL INDICTMENT.[1]

"THE future is for the nations who are chaste." This saying of Tom Mann's is the concluding sentence in the book before us, an authorised translation of Mr. Paul Bureau's "Indiscipline des Moeurs," and it adequately sums up the author's beliefs. In an essentially scientific manner Mr. Bureau analyses the first of the three causes of what he terms the "great sickness" of France—namely, sexual licence, the others being alcoholic intemperance and lack of an efficient central governing and representative authority. He deals with much of the disagreeable side of life as it exists in that country, and it is particularly the attitude of the average man to sexual matters that he first attacks. For example, the attitude of what we should term a decent class family to the "amorous amusements of the young man" is that his enjoyment is innocent and free from moral blame "so long as the four accidents which may follow imprudent conduct are avoided: venereal disease, prosecution in the high court, an action for damages before civil courts on the charge of seduction or paternity." With the conduct of married people Mr. Bureau is no less severe in his condemnation, and although surprisingly influenced by much of the teaching of Malthus he is nevertheless wholeheartedly out against "neo-Malthusianism." The book, which Dr. Mary Scharlieb in an introduction describes as "at once terrible and fascinating," should certainly be studied by those interested in social and economic problems. The author's patriotism and his enthusiasm are unquestionable, and he tells his country frankly that if she "does not reform her habits not only will her glorious victory bring her no benefit, but, on the contrary, the war will have accelerated yet more swiftly the hour of her fall and will bring her nearer the hour of her final ruin." Hard words, but those who know France at all intimately realise that such words contain more than much truth, and the author's masterly analysis of the problem of sexual morality is not without interest to this country as well. We live in a glass house, as readers of the police news and the records of *causes célèbres* show.

[1] Towards Moral Bankruptcy. By Paul Bureau. With an Introduction by Mary Scharlieb, C.B.E., M.D., M.S. Lond. London: Constable and Company. 1925. Pp. 546. 16s.